

# Development Approval/Permit Process

## Troy, Michigan

*By*

Zucker Systems  
Paul Zucker, President  
Katie Wilson, Senior Associate  
Scott Troyer, Senior Associate  
Mac Birch, Kendig Keast Collaborative



**1545 Hotel Circle South, Suite 300  
San Diego, CA 92108  
(619) 260-2680  
[www.zuckersystems.com](http://www.zuckersystems.com)  
[paul@zuckersystems.com](mailto:paul@zuckersystems.com)**

**January 2008**



# Table of Contents

<b>I. EXECUTIVE SUMMARY .....</b>	<b>1</b>
BACKGROUND .....	1
OVERVIEW POSITIVE FINDINGS .....	1
KEY PRIORITY AREAS FOR IMPROVEMENT .....	1
1. TECHNOLOGY .....	1
Findings.....	1
Recommendations.....	1
2. TIMELINES .....	2
Findings.....	2
Recommendations.....	2
3. BUDGETS AND FEES .....	2
Findings.....	2
Recommendation .....	3
<b>II. INTRODUCTION AND SUMMARY .....</b>	<b>5</b>
A. BACKGROUND AND PURPOSE .....	5
METHODOLOGY .....	5
FINDINGS AND RECOMMENDATIONS .....	7
Areas of Strength .....	7
Opportunities for Improvement .....	7
<b>III. ISSUES RELATED TO MULTIPLE DEPARTMENTS .....</b>	<b>13</b>
A. FINANCIAL ISSUES .....	13
Resources and Fees .....	13
Credit Cards .....	14
B. HANDOUTS .....	14
C. ONE-STOP-PERMITTING .....	14
D. WAYFINDING .....	15
<b>IV. TECHNOLOGY .....</b>	<b>17</b>
A. INTRODUCTION .....	17
E. OVERVIEW .....	17
F. GENERAL INFORMATION SYSTEMS ENVIRONMENT .....	18
Description .....	18

Observations and Issues.....	18
G. PERMITTING SOFTWARE.....	19
Observations and Issues.....	20
Building Inspection.....	20
Engineering Department.....	21
Planning Department.....	21
Permitting Software Support.....	22
Permitting Software Training.....	23
Attachment of Documents.....	23
The Future of BS&A Equalizer.....	25
H. ELECTRONIC PLAN SUBMITTAL.....	25
I. ARCHIVAL SYSTEMS.....	26
J. GEOGRAPHIC INFORMATION SYSTEMS.....	30
Observations and Issues.....	30
<b>V. BUILDING AND INSPECTION DEPARTMENT.....</b>	<b>31</b>
A. PROFILE.....	31
Authority.....	31
Basic Functions.....	31
Organization.....	32
Positive Findings.....	33
B. PERMIT, INSPECTION AND REVENUE ACTIVITY.....	33
Permit Issuance and Inspection Activity.....	33
Building Permit Valuation History.....	36
Revenue Verses Budget History.....	36
C. ORGANIZATIONAL ISSUES.....	37
Certification of Staff.....	37
Customer Input and Feedback.....	38
Fees.....	38
Investing in Staff.....	39
Quality Control Assessments.....	40
Staff Meetings.....	41
D. PLAN SUBMITTAL, PERMIT ISSUANCE AND INSPECTION REQUESTS.....	41
Counter Operation.....	41
Plan Submittal Process.....	41
Permit Issuance.....	42
Inspection Request, Distribution and Tracking.....	43
Posting of Inspections.....	44
Providing Customer with Inspection Results.....	45

E.	PLAN REVIEW .....	45
	Organizational Structure .....	45
	Plan Review Activity .....	46
	Analysis of Plan Review Workload & Staffing.....	47
	Current Plan Review Performance Targets .....	51
	Assessment of Actual Plan Review Performance.....	51
	Recommended Plan Review Procedural Reassessments.....	52
	Recommended Expedited Plan Review Processing Alternative .....	53
	Recommendation Regarding Maintaining Constant Staffing.....	55
	Recommended Change on Plan Review Data Tracking.....	56
	Recommendation for Plan Review Automation .....	58
	Plan Review Performance Standards .....	58
F.	CONSTRUCTION INSPECTIONS .....	59
	Organizational Structure .....	59
	Automation Improvements Recommended .....	59
	Inspection Counting.....	60
	Recommended Better Plan Review Allocation .....	60
	Recommended Utilization of Re-inspection Fees .....	61
G.	CODE ENFORCEMENT .....	61
	Organizational Structure .....	61
	Code Enforcement Workflow .....	62
	Process Change .....	62
	Housing Inspections.....	63
H.	APPEAL BOARDS .....	65
I.	FIRE PREVENTION.....	65
	Organizational Structure .....	65
	Authority .....	66
	Departmental Processing Interaction .....	66
	Automation .....	67
<b>VI.</b>	<b>ENGINEERING DEPARTMENT .....</b>	<b>69</b>
A.	POSITIVE FINDINGS .....	69
B.	PROFILE .....	69
	Authority .....	69
	Organization.....	69
	Activity .....	72
C.	PROCESS ISSUES .....	73
	Engineering Site Plan Reviews.....	73
	Drainage/Soil Erosion Issues .....	75
	Bonds and Deposits.....	75

D.	ORGANIZATIONAL ISSUES .....	76
	Staffing Analysis.....	76
	Engineering Plan Review.....	76
	Environmental Specialist Plan Review .....	79
	Traffic Engineering Review.....	82
	Public Improvement Inspections .....	83
<b>VII.</b>	<b>PLANNING DEPARTMENT .....</b>	<b>85</b>
A.	POSITIVE FINDINGS .....	85
B.	PROFILE .....	85
	Organization.....	85
	Authority .....	87
	Activity .....	87
C.	PROCESS ISSUES .....	89
	Processing Time.....	89
	Planning Commission .....	89
	Public Notices .....	91
	Future Land Use Plan.....	91
	Big Beaver Corridor Study .....	91
	Zoning Ordinance .....	92
	Site Plan Reviews .....	92
	Special Use Requests .....	99
	Subdivision Applications.....	101
	Site Condominium Site Plan Reviews .....	102
	Rezoning Requests.....	105
	Planned Unit Developments (PUD's).....	107
	Street Vacation Applications .....	110
	Zoning Verification Requests .....	111
	Site Plan Compliance Inspections.....	112
A.	ORGANIZATIONAL ISSUES .....	113
	Board of Zoning Appeals.....	113
	Staffing Analysis.....	114
	Planning Department Website .....	116
<b>VIII.</b>	<b>EMPLOYEE PERCEPTIONS.....</b>	<b>119</b>
	Attorney's Office .....	120
	Building Department.....	120
	Engineering Department .....	120
	Management.....	121
	Planning Department .....	121

<b>IX. CUSTOMER PERCEPTIONS.....</b>	<b>123</b>
A. MAYOR AND CITY COUNCIL .....	123
Overview.....	123
Building and Fire .....	124
Business Plan .....	124
Code Enforcement .....	124
Ordinances .....	124
Redevelopment .....	124
Staff Attitudes .....	124
Technology .....	125
B. FOCUS GROUPS.....	125
Positive Overview.....	125
Building Department.....	125
Big Beaver Corridor Plans .....	126
Board of Zoning Appeals.....	126
Engineering Department .....	126
Fire Department .....	127
Ordinances .....	127
Parks and Recreation Department.....	127
Planned Unit Developments (PUDs) .....	127
Planning Commission .....	127
Planning Department .....	127
Site Plan Review .....	127
Technology .....	128
Tenant Improvement.....	128
CUSTOMER SURVEYS.....	128
Appendix A - Persons Interviewed.....	139
Appendix B - Employee Short Questionnaire .....	142
Appendix C - Employee Long Questionnaire.....	155
Appendix D - Customer Survey Comments .....	161
Appendix E - Building Inspection Department Data.....	171

## List of Tables

Table 1 Table of Recommendations .....	8
Table 2 Electronic Storage Comparisons.....	29
Table 3 Building Inspection Department Staff .....	32
Table 4 Building Permits Issued and Total Inspection Performed .....	34
Table 5 Construction Inspection Preformed .....	35
Table 6 Building Permit Valuations by Major Sector.....	36
Table 7 Revenue Verses Budget .....	37
Table 8 Commercial Plan Review Data Listed by Major Categories .....	46

Table 9 2006 Residential Plan Review Data Listed by Major Categories .....	47
Table 10 Commercial Calculated Plan Reviews Time Required Based on Count of Major Projects Reviews Shown In Table 8.....	48
Table 11 2006 Residential Plan Reviews.....	49
Table 12 Commercial Available Productive Hours .....	50
Table 13 Residential Available Productive Hours.....	50
Table 14 Review Commercial Time Assessment.....	52
Table 15 Recommended Plan Review Performance Targets.....	59
Table 16 Housing Inspection Time Estimate.....	64
Table 17 Housing Inspector Productive Assessment.....	65
Table 18 Staff Functions – Engineering Department .....	70
Table 19 Engineering Department Preliminary and Final Site Plan Reviews.....	72
Table 20 Engineering Department Average Review Time.....	77
Table 21 Engineering Plan Review Required Hours Analysis .....	78
Table 22 Engineering Department Available Hours for Plan Reviews .....	79
Table 23 Environmental Specialist - Average Review Time .....	80
Table 24 Environmental Specialist – Plan Review Hours Analysis .....	81
Table 25 Environmental Specialist - Available Hours for Plan Reviews.....	81
Table 26 Planning Department Positions and Responsibilities .....	86
Table 27 Planning Department Activity .....	88
Table 28 Planning Department – Hours Required for Processing.....	115
Table 29 Planning Department Non-Application Related Responsibilities .....	115
Table 30 Planning Department Staffing Analysis .....	116
Table 31 Number of Employees Responding to Questionnaires.....	119
Table 32 Plan Review Data.....	172

## **List of Figures**

Figure 1 Methodology Overview .....	5
Figure 2 Building Inspection Department Organization .....	33
Figure 3 Building Permits Issued.....	34
Figure 4 Construction Inspection Activity by Trade.....	35
Figure 5 Construction Valuations of Building Permits .....	36
Figure 6 Revenue Cost Comparison .....	37
Figure 7 Engineering Department Organization.....	71
Figure 8 Engineering Plan Review Staffing Organization .....	77
Figure 9 Environmental Section Staffing Organization .....	80
Figure 10 Traffic Engineering Organizational Structure .....	82
Figure 11 Inspection Staffing Organization.....	84
Figure 12 Organization .....	87
Figure 13 Preliminary Site Plan Review Workflow .....	94
Figure 14 Final Site Plan Approval Workflow .....	96
Figure 15 Special Use Request Workflow .....	100
Figure 17 Site Condominium Site Preliminary Plan Review Process.....	103



Figure 18 Site Condominium Final Plan Approval Process ..... 104  
Figure 19 Rezoning Request Workflow Process ..... 106  
Figure 21 Street Vacation Applications Workflow Process ..... 111  
Figure 22 Customer Survey Responses From Applicants ..... 130  
Figure 23 Customer Survey Responses From Owner Applicants ..... 135



# **I. EXECUTIVE SUMMARY**

## **BACKGROUND**

This study was initiated by the City to conduct a comprehensive evaluation of the City's development approval and permit processes such as, but not limited to, rezonings, special use approvals, site plan approvals, building permits, plan check, development approval, inspections and enforcement processes established by the departments.

## **OVERVIEW POSITIVE FINDINGS**

Overall, the development related departments in Troy are operating well. Comments from the customers via focus groups and mail surveys are some of the best we have seen in our studies. Additionally, staff scored high on the employee surveys indicating generally positive attitudes. The City of Troy prides itself in being a premier city in the State of Michigan and wishes to remain in that category.

## **KEY PRIORITY AREAS FOR IMPROVEMENT**

This report includes 102 recommendations for improving Troy's development approval and permit processes. While all the recommendations are important, we believe there are three key areas or groupings that need the highest priority as follows:

### **1. TECHNOLOGY**

#### **Findings**

Troy's current information systems infrastructure can be categorized as being substantially up to date, and in some cases "leading edge." However, in relation to the development approval and permit processes, the City lags behind more progressive communities. These functions are rapidly changing around the country with automated permit processing and monitoring systems, electronic plan filing over the Internet, and electronic document-management systems which can finally lead to the so called "paperless" office. Troy can use an aggressive approach to technology as part of its overall economic development and business strategy.

#### **Recommendations**

We have made numerous technology recommendations throughout this report. Key areas for early implementation include:

- The Information Technology Department and the development related departments should form a technology partnership to move ahead, Recommendation 7.
- The City's Equalizer system is a workable system and has many more features than currently being used. Its use should be expanded in the Building and Engineering Departments and added to the Planning Department, Recommendation 8, 11 and 37.
- The departments should use Equalizers document attachment capabilities, Recommendation 16.

Once these improvements are in place the City should begin to prepare for electronic plan submittal.

## **2. TIMELINES**

### **Findings**

Troy's timelines for planning activities are well within national standards and work well. Timelines for Building and Engineering activities, although within many national standards, in some cases are longer than we recommend. Timelines that are longer than necessary add to the cost of development and in some cases can even reduce quality. Timelines are not only a concern to developers, but also local businesses and homeowners get frustrated when they wish to move ahead with their projects.

### **Recommendations**

In order to address timeline issues we suggest:

- Using contract staff when necessary if staff cannot meet agreed upon timelines, Recommendation 45 and 54.
- Set specific turnaround times for various activities and attempt to meet them 95% of the time, Recommendation 64, 65, 78, 79, 86, 87, and 90.

## **3. BUDGETS AND FEES**

### **Findings**

The City has an excellent reputation for prudent and conservative budget policies. As such, recommendations in this report that will require additional funds may be looked on in a negative light. However, any poor performance in development related activities creates a high penalty in the development community. The penalty is so high

that virtually all developers are more than willing to pay extra fees for shorter timelines and more certainty in the process. We have proven this and documented it in our studies in 27 states.

### **Recommendation**

We recommend that the City provide the necessary funds to implement the recommendations of this report. The most costly of the recommendations will be for the technology improvements. While we would not object to added expenditures from the General Fund, a more reasonable approach would be to fund the improvements through increased fees. Specific recommendations include:

- Consider fee increases as necessary to meet suggested performance standards and technology improvement, Recommendation 2.



## II. INTRODUCTION AND SUMMARY

### A. BACKGROUND AND PURPOSE

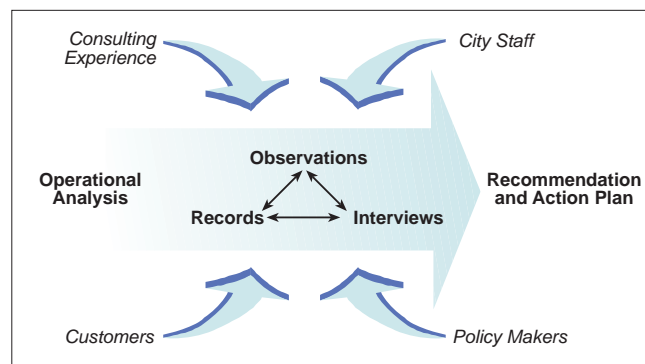
This study was initiated by the City to conduct a comprehensive evaluation of the City's development approval and permit processes such as, but not limited to, rezonings, special use approvals, site plan approvals, building permits, plan check, development approval, inspections and enforcement processes established by the departments.

The RFP for the study was issued April 3<sup>rd</sup> 2007. Interviews were held June 4<sup>th</sup> 2007. Zucker Systems was selected for the contract with a contract dated June 18<sup>th</sup> 2007. Zucker Systems staff spent time in Troy August 14<sup>th</sup>, 15<sup>th</sup> and 16<sup>th</sup> and September 18<sup>th</sup> and 19<sup>th</sup>.

### METHODOLOGY

Zucker Systems used a proprietary well-tested, integrated methodology for this study, as shown in Figure 1. We brought our extensive experience to the study, worked closely with City staff, and solicited input and observations from customers and policy makers. The methodology is built on interrelating records, observations, and interviews. Each is necessary for valid studies. National research has shown that each one of these three—if relied upon exclusively—can be subject to substantial error. For example, record systems are often found to be as high as 50% in error, or the wrong things are measured. We used observations and interviews to verify records. Records and interviews were used to verify observations. Records and observations were used to verify interviews. Each group of people, shown in Figure 1, was an important part of the process.

**Figure 1**  
**Methodology Overview**



Specific activities conducted for this study included the following:

### **Customer Input**

- Three customer focus groups of 20 people.
- A mail survey to 738 applicants for development approvals or permits.
- A mail survey was sent to 219 homeowner builders.
- Meeting with Chairman of the Planning Commission.
- Telephone Interview with Chairman of the Board of Zoning Appeals.
- Meeting with Chairman of the Building Code Board of Appeals.
- Meeting with Chairman of Brownfield Redevelopment Authority.

### **Policy Maker Input**

- Individual interviews with the Mayor and six City Council members.

### **Staff Input**

- Meeting with City Manager.
- Group meetings with 38 managers and staff who also completed a short anonymous questionnaire.
- A long employee questionnaire completed by 14 staff.
- Individual interviews with people listed in Appendix A.
- Various meetings with staff to discuss issues and processes.

### **Meetings, Observations and Research**

- Review of the planning and permitting systems.
- Review of forms, handouts, policies, files, and ordinances.
- Observation of staff at work.
- Observation of the public counters and reception areas.
- Tour of City offices.
- Observed one Planning Commission meeting.
- Observed one Downtown Development Authority meeting.
- Review of draft report by various staff and City officials.



## **FINDINGS AND RECOMMENDATIONS**

This assessment found many exemplary features within the various City functions, as well as a number of areas where improvement is possible.

### **Areas of Strength**

Overall, the development related departments in Troy are operating well. Comments from the customers via focus groups and mail surveys are some of the best we have seen in our studies. Additionally, staff scored high on the employee surveys indicating generally positive attitudes. The City of Troy prides itself in being a premier city in the state of Michigan and wishes to remain in that category.

### **Opportunities for Improvement**

Problem areas and opportunities for improvement are described throughout this report. What we consider to be seven key areas, or themes, are discussed in the Executive Summary, the first chapter in this report.

Table 1 summarizes the 102 recommendations and opportunities for improvement made throughout this study. To assist the reader, each summarized recommendation is cross-referenced to the page on which the supporting text appears. Although all of these recommendations are important, each was given a priority number in order to help the City with implementation. There are 19 priority number one recommendations, 57 priority number two recommendations and 26 priority number three recommendations. We assume that existing staff will implement many of the recommendations and the cost, except for new staffing, generally should be absorbed through greater efficiency.

To further help the City and departments in implementation, we have also coded all the recommendations. “Phase One Actions” are recommendations, which we believe should be completed in the first nine months. “Phase Two Actions” we believe should be completed within 18 months.

There are 77 Phase One Action recommendations. Some of these are given priority 1, 2 or 3. However, that does not mean that only the priority 1 recommendations should be addressed. There are 25 Phase Two Action recommendations. The departments should develop a detailed implementation plan with time targets for these recommendations.

For each recommendation, we also indicate a responsible party for implementation.

While the above priorities and action schedules should help the City with its implementation plan, it’s essential to initially focus on the seven key priorities discussed in the Executive Summary.

**Table 1  
Table of Recommendations**

#	Recommendation	Responsibility	Page	Priority	Phase One Actions	Phase Two Actions
1.	Agree on an implementation plan	City Manager and department directors	12	1	X	
<b>ISSUES RELATED TO MULTIPLE DEPARTMENTS</b>						
2.	Increase fees as needed to meet performance standards	City Council	13	1	X	
3.	Accept credit cards for development fees	Finance Department	14	2	X	
4.	Develop additional handouts	Building, Engineering and Planning Departments	14	2	X	
5.	Consider additional co-location of facilities	City Manager	15	3		X
6.	Improve wayfinding in City Hall	City Manager	16	3	X	
<b>TECHNOLOGY</b>						
7.	IT and Development Departments to form technology partnership	IT and all Development Departments	19	1	X	
8.	Expand use of Equalizer features	IT and all Development Departments	21	1	X	
9.	Use Equalizer for tracking Engineering permits	IT and Engineering Department	21	2	X	
10.	Provide Equalizer training in Engineering Department	IT	21	2	X	
11.	Install Equalizer for the Planning Department	IT and Planning Department	22	1	X	
12.	Configure Equalizer for electronic review and comment	IT and all Development Departments	22	2		X
13.	System administrators in departments to participate in Equalizer user group functions	IT and all Development Departments	23	2	X	
14.	Assign Equalizer backup support staff	All Development Departments	23	2	X	
15.	Provide Equalizer training	IT and all Development Departments	23	2	X	
16.	Use Equalizer's document attachment capabilities	IT and all Development Departments	24	1	X	
17.	Give priority to implementing document management for Building and Planning documents	IT and Building and Planning Departments	24	2	X	
18.	Add clerical staff for entering documents	Building Department	24	2	X	
19.	Require electronic documents whenever possible	All Development Departments	24	2		X
20.	Implement interface re-Equalizer and enterprise software	IT	25	3		X
21.	Migrate to electronic plan submittal	All Development Departments	26	2		X
22.	Purchase larger monitors for viewing plans	City Council	26	2		X
23.	Start accepting electronic plans	All Development Departments	26	2		X
24.	Determine best plan storage system	IT and all Development Departments	29	2		X
25.	Archival system to be Web enabled	IT and all Development Departments	29	3		X
26.	Archive plans immediately after permit issuance	IT and all Development Departments	29	3		X

#	Recommendation	Responsibility	Page	Priority	Phase One Actions	Phase Two Actions
27.	Discontinue the use of Microstation for GIS	Planning Department	30	2	X	
28.	Provide GIS training for planners	IT	30	2	X	
<b>BUILDING INSPECTION DEPARTMENT</b>						
<b>Permit, Inspection and Revenue Activity</b>						
29.	Track sub-trade permits	Building Department	35	3	X	
30.	Change construction inspection activity tracking	Building Department	35	3	X	
<b>Organizational Issues</b>						
31.	Establish customer feedback groups	Building Department	38	3		X
32.	Establish fees based on costs	Building Department	39	2	X	
33.	Implement fees based on behavior	Building Department	39	3	X	
34.	Emphasize staff input	Building Department Director	40	2	X	
35.	Establish quality control system	Building Department	40	3		X
36.	Hold staff meetings	Building Department Director	41	3	X	
<b>Plan Submittal, Permit Issuance and Inspection Requests</b>						
37.	Deploy Equalizer automated plan review module	Building Department and IT	42	1	X	
38.	Use integrated permit issuance process	Building Department	43	3	X	
39.	Issue permits over the Internet	Building Department and IT	43	3		X
40.	Use automated inspection request system	Building Department and IT	44	2	X	
41.	Use field computers for inspectors	Building Department and IT	45	2	X	
42.	Provide inspection results to customers	Building Department and IT	45	3		X
43.	Incorporate transaction dates in data tracking system	Building Department and IT	52	2	X	
44.	Develop expedited processing system	Building Department	55	3	X	
45.	Use contractors as necessary to meet performance standards	Building Department	56	1		
46.	Use full time position for plan review process	Building Department	56	2	X	
47.	Track review disciplines by product types	Building Department and IT	58	2	X	
48.	Adopt performance plan review targets	Building Department	59	1	X	
<b>Construction Inspections</b>						
49.	Buy field computers for inspectors	Building Department and IT	60	1	X	
50.	Provide staff computer training	IT	60	2	X	
51.	Plan transition to automate inspection process	Building Department and IT	60	2		X
52.	Adopt inspection count system	Building Department	60	3	X	
53.	Prioritize sub-trade plan review to meet performance standards	Building Department	61	1	X	
54.	Use contractors to meet inspection performance goals	Building Department	61	2	X	

#	Recommendation	Responsibility	Page	Priority	Phase One Actions	Phase Two Actions
55.	Program re-inspection fees into automated system	Building Department and IT	61	2	X	
<b>Code Enforcement</b>						
56.	Change Civil Infraction process	Building Department	62	2		X
57.	Create code enforcement data system	Building Department	63	2		X
58.	Citizen education meetings in selected neighborhoods	Building Department	63	3		X
<b>Fire Prevention</b>						
59.	Change job specifications	Fire Department	67	3		X
60.	Integrate fire needs in automation system	Fire Department and IT	67	2		X
<b>ENGINEERING DEPARTMENT</b>						
61.	Use electronic permit tracking system	Engineering Department and IT	73	2	X	
62.	Provide weekly management reports to monitor inspection status	Engineering Department	73	2	X	
<b>Process Issues</b>						
63.	Complete Preliminary Site Plan reviews in five days	Engineering Department	73	1	X	
64.	Turnaround times for Final Plans of 30, 15 and 7 days	Engineering Department	74	1	X	
65.	Meet timelines 95% of the time	Engineering Department	74	1	X	
66.	Route plans for review within two days	Engineering Department	74	1	X	
67.	Route plans to Deputy in Director's absence	Engineering Department	74	2	X	
68.	Electronic permit tracking for Final C of O	Engineering Department	76	2		X
<b>Organizational Issues</b>						
69.	Explore sharing stormwater responsibilities with Public Works	Engineering Department and Public Works	82	2		X
70.	Include Final Site Plan turnaround times in consultant contracts	Engineering Department	83	2	X	
<b>PLANNING DEPARTMENT</b>						
<b>Process Issues</b>						
71.	Planning Commission to have two Regular and one Special Meeting	Planning Commission	90	3	X	
72.	Uniform color and format for public hearing notices	Planning Department	91	3	X	
73.	Expand authority of Planning Director re Preliminary Site Plans	Planning Commission	95	3		X
74.	Provide Final Site Plan Approval checklist in three working days	Planning Department	97	2	X	
75.	Provide for meeting after Preliminary Site Plan Approval	Planning Department	97	2	X	
76.	Electronic tracking system for application monitoring	Planning Department and all development departments	98	2	X	
77.	Weekly reports from monitoring system	Planning Department	98	2	X	
78.	Set turnaround times for all applications at 30, 15 and 7 days	Planning Department	98	1	X	

#	Recommendation	Responsibility	Page	Priority	Phase One Actions	Phase Two Actions
79.	Meet turnaround times 95% of the time	Planning Department	99	1	X	
80.	Expand mail notice time from 15 days to 25 days	Planning Department	101	3	X	
81.	Schedule City Council hearings at next available meeting	City Council	101	3	X	
82.	Provide Final Plan Approval checklist in three working days	Planning Department	101	2	X	
83.	Final Plan Approval petitioner to have option of meeting with the reviewers	Planning Department	105	2	X	
84.	Electronic tracking system for Final Plans	Planning Department and IT	105	2	X	
85.	Weekly management reports for Final Plans	Planning Department	105	2	X	
86.	Review times for Final Plans of 30, 15 and 7 days	Planning Department	105	1	X	
87.	Meet review times for Final Plans 95% of the time	Planning Department	105	1	X	
88.	Schedule City Council for Final Plans at next available regular meeting	City Council	105	2	X	
89.	Monitor PUD applications	Planning Department	110	2	X	
90.	Set review times for Final Development Plans at 30, 15 and 7 days	Planning Department	110	1		
91.	PUD consultant included at Pre-application meeting	Planning Department	110	2	X	
92.	Respond to Zoning Verification Requests in five days	Planning Department	111	2	X	
93.	Complete Site Compliance Inspections in five days	Planning Department	112	2	X	
<b>ORGANIZATIONAL ISSUES</b>						
94.	Variance request applications managed by Planning Department	Planning Department and Building Inspection Department	114	2	X	
95.	Process variance requests prior to Final Site Plan Approval	Planning Department	114	2	X	
96.	Expand Planning Department data on website	Planning Department	116	3	X	
97.	Include three years of Planning Commission meeting agendas on website	Planning Department	116	3		Xg
98.	Separate current Planning Commission agendas from the archived agendas on the website	Planning Department	117	3		X
99.	Include public hearing notices for Planning Commission agenda on website	Planning Department	117	2	X	
100.	Post Planning Commission Action Agenda on website immediately following the meeting	Planning Department	117	2	X	
<b>EMPLOYEE PERCEPTIONS</b>						
101.	Review questionnaires for improvement ideas	Directors of all Development Departments	122	2	X	
<b>CUSTOMER PERCEPTIONS</b>						
102.	Review customer questionnaires for improvement ideas	Building, Engineering and Planning staffs	129	2	X	

Before the City begins implementing this study, we suggest that it take the following action.

**1. Recommendation: The City Manager and the Directors of the relevant Departments should review the study and agree on an implementation plan, which should include:**

- **An agreed-upon timetable and work program**
- **Costs estimates and method of funding**
- **Confirmation by the Mayor and the City Council**

The various departments already have many important tasks they are undertaking and may find the 102 recommendations overwhelming. However, as improvements take place and staff becomes empowered to change, the City may be surprised at how fast implementation can occur.

# III. ISSUES RELATED TO MULTIPLE DEPARTMENTS

## A. FINANCIAL ISSUES

### Resources and Fees

Because of the high cost of delay, most developers and businesses are more than willing to pay extra fees for short timelines and good service. We confirmed this in our various developer interviews and focus groups. This has been our national experience as well.

In Michigan, the State Construction Code Act requires that fees for building construction and renovation be used only for construction code costs, including an allocation of estimated overhead costs. In Troy, the fees have been less than the costs. For 2005-2006 the Construction Code Expenses were \$2,161,325 and the revenue was \$1,583,486 resulting in a shortfall of \$577,839. The expenses included an external overhead allocation of 8%. In our experience, this is likely understated as we often see external overhead charges of 20% or more. The Finance Department estimates the shortfall since July 1, 2001 totals \$2,723,251.

We did not examine the expenditure revenues for Engineering, Fire, Parks, or Planning, but it appears that any fees for these functions are also substantially less than expenditures.

It appears that Troy has had a generally sound and conservative approach to City finances which leads to a careful crafting of departmental budgets. However, for the development related functions, to the extent that lack of resources results in diminished services, it can be viewed as penny wise and pound foolish. A better approach is to determine appropriate performance standards, determine the resources needed to meet the standards and then, if necessary, increase fees to cover the increased costs.

In Troy's case, the budgets for the development related functions are reasonably good, but there is need for a few additional positions, as well as technology needs. We suggest the City consider fee increases to cover these needs. Technology needs could be pro-rated over a standard three year period. The City might even consider sharing the fee increase with the General Fund. For example, 25% of the increase might go to reducing the General Fund gap with 75% going to meet the performance standards.

**2. Recommendation: The City should consider fee increases as necessary to meet suggested performance standards for the development functions.**

## Credit Cards

The City accepts credit cards for Parks and Recreation and taxes, but not for any of the development fees. Accepting credit cards for these fees has become common in many communities and is essential if the City is to move to accepting some applications or issuing some permits over the Internet.

- 3. *Recommendation: The City should accept credit cards for various development related fees.***

## B. HANDOUTS

Handouts can be an excellent part of providing good customer service. Troy needs a good handout describing the overall development process as well as a variety of technical handouts. While some functions have a few technical handouts they are not well displayed. For example:

- Building has two handout racks at the front counter. The one to the left of the counter tends to be messy with handouts missing or flopping over the rack. The rack to the right is hard to see and use. The wall to the left of the counter would be an excellent location for an attractive handout rack that could include handouts for both Building and Planning. It might even be useful to include some handouts for the other development functions.
- Planning has no handouts displayed at the counter.
- Engineering has no handouts displayed at the counter.

- 4. *Recommendation: The development related functions should develop additional public handouts and have them displayed at all the public counters, as well as included on the web site.***

## C. ONE-STOP-PERMITTING

The national trend for development activities is to co-locate all development related functions in on location, preferably side-by-side on one floor. Some of these functions are then combined, or at least their processes are integrated. The relevant functions for Troy include Building, Engineering, Economic Development, Fire, Parks, and Planning. All of these except for Parks are located in City Hall which at least partially accomplishes the goal. Additionally, the low volume of permit activity in Troy allows the functions to operate reasonably well without full co-location. We were not under contract to review City Hall and did not talk to various departments. A few changes could be considered as follows:



- Switching Planning and the Treasurer appears to be an easy move. This would place Planning and Building side-by-side, which is accomplished in many communities.
- Moving Engineering and Real Estate Development to the second floor appears difficult due to the size of the Engineering Department.
- The Fire Department is a smaller function and could be a candidate for a First Floor Second floor switch.

**5. *Recommendation: As opportunities present themselves, the City should work toward co-locating as many development related functions as feasible.***

## **D. WAYFINDING**

City staff spend a considerable amount of time advising citizens that they are in the wrong City building or where the function they need is located in City Hall. Buildings that are laid out with continuous corridors like Troy’s City Hall can be confusing. As consultants new to the City we experienced the same problem.

Although addressing this problem was not part of our contract, we have developed many permit centers and with our architectural background suggest that solving this problem can be very straight forward. The following is not a detailed design, but suggestions that the City may find useful.

- The problem starts when leaving Big Beaver Road to the Civic Center driveway. A Civic Center sign on Big Beaver Road is located before the driveway to the hotel which causes many people to turn into the hotel drive instead of the Civic Center. This sign could be readily located on the other side of the hotel driveway.
- There is an overall sign for the layout of various civic functions located on the Civic Center driveway, however many visitors miss this when entering the area. Better signage at the entrance to City Hall could help to direct people who need to go to another building.
- The directional signs located by the stairways inside the building entrances showing the location of various City Hall offices could be improved. At one location on the first floor the Engineering Department has been excluded and a temporary pasted on sign saying “Taxes” has been included. All functions are not listed alphabetically. Other signs could be improved and others added. Suggestions include:
  - ✓ All entrances and stairwells on both the first and second floors should list all functions on both floors. For example, if you are on the second floor and the

office you are looking for is on the first floor, the first floor offices should be listed.

- ✓ It could be useful to use a different color for first floor and second floor functions.
- ✓ Functions to the right and left hand hallways should not be inter-mixed, i.e. all functions to the right should be listed first and then the functions to the left.
- ✓ All functions should be listed alphabetically.
- ✓ While some offices have small projecting signs that can be seen when looking down the hallway, many do not. These should be used for all functions and be slightly larger. Some communities use a colorful banner for this purpose.
- ✓ There are some instances when the visitor looks down the hallway they see a blank wall at the end. Many of these could be ideal locations to announce a nearby function.

**6. *Recommendation: The City should consider improving wayfinding at City Hall.***

## IV. TECHNOLOGY

### A. INTRODUCTION

This section addresses the Planning Department's and Building Inspection Department's use of information technology to support day-to-day and strategic decision-making. Because of expressed concerns at the onset of this study, particular emphases have been given to:

- The Building Inspection Department's use of the BS&A Software "Equalizer" permitting software system.
- The need for the Planning Department to make more substantial use of automation tools, particularly the permitting software.

### E. OVERVIEW

Development review departments cannot escape the rapid globalization process that has allowed products to be produced all over the world. Technology has removed the barrier of space and time by allowing instantaneous connectivity. Plans are no longer being produced by just local designer and plans no longer need to be reviewed solely by in-house staff. The electronic age allows plans to be submitted instantly from any place in the world and can be reviewed by multiple reviewers located anywhere simultaneously making edits to a single set of documents. Technology has removed the restrictive barriers of the past and has enabled new processing systems that are much more efficient. Development review services must realize that time is money, and by utilizing automation the time needed to travel to the City Hall to submit plans can be eliminated. The ability to communicate with multiple designers located in their own offices simultaneously is possible eliminating the need to provide large meeting rooms to accommodate multiple designers and reviewers. The amount of energy that can be saved through utilizing automation can also reduce the amount of fossil fuels needed to bring people face to face. In order for Troy to truly become a City of the future it should fully deploy the state of the art automation systems throughout the development review departments. The IT department needs to stay abreast of the changing developments in automation and deploy them as they are made available. The cost of deploying automation compared to adding additional staffing or continuing to consume unnecessary energy resources is low. Automation allows greater productivity from staff and provides scalability. It allows multiple resources to work on projects simultaneously and facilitates effective communication without being physically present. Automation rarely becomes disabled which means 24/7 reliability is provided at a fixed cost that is considerably less than adding staff.

How can this modern processing method be utilized in the Troy? A first step is to deploy an automated plan tracking module where all aspects of processing systems take advantage of the latest technologies and processing methodologies. Secondly, projects should be tracked by classifications that group projects by common designation of complexity and functional reviews needed and time required to complete reviews. Third is allowing electronic submittal of plans and providing review staff with the proper hardware and software to review plans online. IT staff should be assigned to identify the advancements being produced in technology and deploy them on an ongoing basis, rather than waiting to staff to ask for help.

## **F. GENERAL INFORMATION SYSTEMS ENVIRONMENT**

### **Description**

The City of Troy's current information systems infrastructure can be categorized as being substantially up-to-date, and in some cases "leading edge". It is maintained by the Information Technology (IT) Department, which reports to the Finance Department and serves all the information systems needs of all City departments.

The Department operates a fiber optic and T1 TCP/IP network for all Department offices in City Hall, Public Works, one Police Station, six Fire Stations, and major cultural/recreational facilities. It operates 20 servers for LAN file management, email distribution, and various network-hosted applications. Network bandwidth and server capacity is deemed by staff to be sufficient for current needs, and the staff continuously monitors data flow volumes to enhance capacity as needed. Since all information requirements of the City of Troy are accommodated on the IT Department's backbone network, data security is given a high level of priority.

The IT Department collaborates with all City departments for selection, procurement, and maintenance of software and hardware. The Department also conducts systems analysis consulting and applications development, as required by the various departments it serves. The centerpiece of Troy's information system applications is the J.D. Edwards enterprise-wide financial management, which operates on an IBM AS/400 minicomputer. Although JDE is developing a modern, Windows-based system to replace its legacy predecessor, the City has begun a selection process for replacement that includes several other vendors.

The IT Department is responsible for 560 desktop or laptop computers, which are typically installed with Windows XP Professional and the Microsoft Office suite.

### **Observations and Issues**

The relationship between the Information Technology Department and the Planning and Building Inspection Departments is excellent. Nevertheless, the use of IT services

actually used by the two client departments lags behind other City departments, most notably the Police and Fire Departments.

The implementation of several key system enhancements and web-based permitting recommendations, contained later in this section, will require extensive collaboration between the departments and will depend on a solid, creative relationship.

**7. *Recommendation: The Information Technology, Building Inspection, Engineering Department, and Planning Department should be more proactive in forming a collaborative working relationship to successfully integrate information technology into their practices.***

## **G. PERMITTING SOFTWARE**

The IT Department hosts BS&A Software's "Equalizer" software for permitting, inspections, and other property-based automation needs. BS&A modules that are in use include:

- Assessing/Equalization
- Building Department Automation (permitting, inspections, and contractor registration)
- Code Enforcement
- Tax Assessment and Collection
- Delinquent Personal Property
- Special Assessment
- Cemetery Management

Equalizer was installed in and commissioned in 1999, replacing an earlier non-Windows permitting system called Cornerstone. At the time of implementation, some but not all of the earlier Cornerstone data was converted for use by Equalizer.

Because BS&A's local government management systems have been highly tailored to accommodate some rather unique Michigan State Legislative provisions for local government operations, BS&A typically markets its software only to In-State cities, counties, and townships. The few exceptional out-of-state users typically procure and implement only the Building Department modules, as these are less reliant on Michigan-specific accounting procedures.

The current version BS&A's software product line was first developed in the early 1990s to be compatible with Microsoft Windows 3.1. Subsequent upgrades have been

made to work with later Windows 95/98/XP versions, but the original architecture, coding environment, and database management approaches have shown their age. Because of this, BS&A has embarked on a total rewrite of its software, migrating into the Microsoft .NET (“dot-net”) coding environment and the Microsoft SQL Server database and providing stronger Internet-based features. BS&A has given priority to converting its financial modules with releases expected by Spring 2008, with releases of upgraded permitting and inspection software later that year. A representative from BS&A indicated that the future module updates will be treated (and priced) as version updates and not as an entirely new software purchase. It is likely that the software update costs will be accommodated by the City’s existing annual maintenance contract with BS&A.

## **Observations and Issues**

Until recently, only Troy’s Building Inspection Department was using the BS&A Equalizer software. It has been used for building permit intake, tracking, and reporting along with inspection reporting. Also, the Code Enforcement module is used by code enforcement staff within the Building Inspection Department. Within the past six months, Equalizer was deployed in the Engineering Department to accommodate the soil erosion and sedimentation approval and inspection processes that are integral to the building permitting and inspection processes.

The Planning Department does not use any permitting software. Planning staff members rely on spreadsheets and manual procedures to track zoning and development approvals.

## **Building Inspection**

As discussed in substantial detail later in this report, little use of Equalizer has been made in the building inspections process. These activities still rely on manual systems with the computerized system relegated to perform little more than as a backup to the paper-based system that has served the Department for many years.

Permitting software vendors, including BS&A, have taken huge steps in recent years to beef up their products for automation support of the inspections process. Enhancements in automatic or semi-automatic inspection scheduling, the support of in-field notebook and tablet (*i.e.*, touchpad) computers, automated web-based or telephone voice recognition of contractor inspection requests, and a number of other inspector productivity tools have become available in recent years. BS&A’s current plans to update the Equalizer software have given a high priority to providing new modules for tablet computers used in the field.

As will be pointed out in later sections of this report, many features of the current Equalizer permitting and inspection system are not being used by staff, and staff has

exhibited no intent to apply them. Indeed, it appears that staff is not even aware of the availability of many of the system's capabilities.

- 8. *Recommendation:* Expand the use of features that are already available in Equalizer such as inspection scheduling and the attachment of documents, photos, and other resources.**

## **Engineering Department**

Within the past eight months, Equalizer has been deployed in the Engineering Department to accommodate the soil erosion and sedimentation approval and inspection processes that are integral to building permitting. These permits are being administered by the City in accordance with the Federal Soil Erosion and Sedimentation Control Act (NRP Public Act 451-Part 91) under the strict guidelines of the State of Michigan. Because of strict State oversight and auditing requirements, the permitting and inspection record keeping processes for soil erosion and sedimentation must be maintained independently from the Building Inspection Department—and in paper format.

There have been reported difficulties in getting Equalizer to function satisfactorily for the Engineering Department staff. Difficulties have arisen with awkward workflow management and sequencing in creating new permits, execution of effective data queries, and the inability to print out a series of inspection reports, i.e., they must be printed one-by-one. Thus far, IT has been unsuccessful in resolving these difficulties.

- 9. *Recommendation:* Resolve the technical and workflow difficulties for using Equalizer for issuing and tracking soil erosion and sedimentation permits within the Engineering Department. Implementing this recommendation may require outside assistance from BS&A.**

- 10. *Recommendation:* Provide formal training to Engineering Department staff in the use of Equalizer.**

## **Planning Department**

The Planning Department does not use any permitting software. Instead, Planning staff members rely on spreadsheets and manual procedures to track the following zoning and development approvals:

- Site plan reviews

- Master Plan amendments
- Zoning Special Use permits
- Zoning verification letters
- Rezoning and zoning text amendments
- Zoning text amendments
- Site Condominiums (used in place of subdivisions)
- Street vacation requests and approvals

The Planning Department staff has strongly expressed the desire to begin using Equalizer and needs to know what to do next.

**11. Recommendation: Install and configure Equalizer for use by the Planning staff. Provide appropriate training that will enable the Planners to use Equalizer to input and track all planning and land use permitting functions.**

Planning application materials are copied and circulated to other departments by hand, postal mail, and other informal means to various review agencies involved in the review and approval process. Equalizer has the capability to configure workflows for approval processes and circulate application information and attached documents to other agencies on the City network. Future releases of Equalizer will include Internet-based modules that will allow the inclusion of external agencies in the review and approval process. Doing this ensures consistency and full documentation of the planning review processes.

**12. Recommendation: Once Equalizer has been deployed for use by the Planning Department, configure Equalizer on the desktops of appropriate reviewing agencies to enable their staff to perform electronic review, comment, and approval of pending applications. Provide appropriate training and follow up to ensure appropriate usage.**

### **Permitting Software Support**

Responses to questionnaires and information obtained in interviews expressed no overall dissatisfaction in network reliability, system performance, and IT staff response to computer support requests. In general, IT is highly regarded. Within the Building Inspection Department, responsibility for day-to-day Equalizer administration has been assigned to the clerical staff person who is mainly responsible for data input.



While these user administration functions appear to be performed adequately and Equalizer is highly reliable, there has been little inclination to use the system's enhanced features or to promote its broader utilization. Many building departments in the U.S. encourage their permitting system administrators to act as champions in leading and supporting their peers in using all available software features. BS&A hosts annual software user group events and informational sessions, but it appears that no one from Troy takes advantage of these programs.

**13. Recommendation: Require, or at least strongly encourage, the system administrators from all departments to participate in Equalizer user group functions and to attend available BS&A training courses.**

Additionally, it appears that there is no established backup assignment to any system administrators during times of illness or vacation. Currently, this may be a minor issue since Equalizer is extremely stable, few others actually use it, and many of the more complicated features have not been deployed. This issue will become more important with the implementation of BS&A's pending new release and expansion into all departments.

**14. Recommendation: As the number of Equalizer users increases and more features are placed in use; assign a backup technical support staff member within the user departments to assist with general automation issues, departmental usage, and resolution of any system issues.**

### **Permitting Software Training**

It appears that there has been little if any formal training or refresher instruction in the use of Equalizer since it was first installed. Informal training and assistance are provided by the system administrator in the Building and Inspection Department, but the lack of external resources has reinforced the *status quo* in Equalizer's use. The lack of formalized training is mitigated by low staff turnover and the Department's limited use, but this will change with deployment of the updated version of Equalizer.

**15. Recommendation: Provide formalized Equalizer user training and brush up classes, possibly using BS&A staff assistance.**

### **Attachment of Documents**

Equalizer provides the capability of attaching Word, PDF, and other documents to a specific application or permit record. The attachment of application submittal

documents, staff review information, drawings, photos, and other types of electronic information enables anyone using the system to view an application, permit, or inspection record. This substantially enhances the overall value of the permitting system and reduces the need to store paper documents

Use of this capability was begun at the time of Equalizer's implementation, but in recent years the process of scanning the permit related documents has lagged. The use of this feature has now become sporadic, as users attach documents to permit records only in situations of convenience such as when an applicant provides an electronic file or with digital photos that can be easily transferred and attached.

In the meantime, Troy has purchased and begun deploying a standalone document scanning and management system called LibertyNET, with phased implementation planned for all City departments. The Building Inspection and Planning Departments are not included as high-priority users of LibertyNet. A demonstration by the Equalizer system administrator showed that the integration of LibertyNET and Equalizer can be made to be near seamless. The City has the technical capability but needs to put in place stronger measures to get all building records scanned and into the system.

**16. *Recommendation:* Utilizing the LibertyNet system, resume routine use of Equalizer's document attachment capabilities for retaining submittal materials, staff reports, drawings, photos, and other materials with the interest of reducing paper requirements and making detailed support materials accessible to all system users.**

**17. *Recommendation:* Elevate the Building Permitting and Planning Departments' priorities in implementing the LibertyNET document management system.**

**18. *Recommendation:* Hire an additional clerical staff person with the responsibility of scanning and entering the documents related to all application files.**

**19. *Recommendation:* Require applicants to provide electronic versions of all drawings and related documents whenever possible.**

## The Future of BS&A Equalizer

Permitting software capabilities have evolved considerably since PC based systems have become practical. There are now many competing vendors offering advanced capabilities and integrated features. The City of Troy is now embarking on a selection process to replace its aging AS/4000 based enterprise (accounting, financial management, personnel, etc.) system. Most if not all of the vendors under consideration include development permitting modules as a part of their array of offerings. Also, the Information Technology Department and Public Works Department has recently acquired the Hansen Software property management modules for utility billing, asset management, and customer service. Hansen also provides a well-respected permitting system.

In the meantime, as already mentioned BS&A Software (which also provides a fully integrated series of enterprise management modules) is retooling its entire product line and intends to remain competitive in the Michigan market. BS&A's Equalizer permitting modules, even in their present form, appear to be serving Troy's needs satisfactorily and should be even more effective as more of their existing features are put in use by the Building Inspection, Planning, and Engineering departments. Also, a BS&A representative indicated that they can provide reasonably priced interface programs that will enable Equalizer to seamlessly communicate with general ledger and other accounting programs, thereby facilitating the permit fee collections process.

For these reasons, it appears that Troy should continue using the BS&A Equalizer package, should establish closer ties with the vendor (such as participating in user group activities and attending available training courses), and should embrace the enhancements that should become available in 2008.

**20. Recommendation: Continue using Equalizer and implement appropriate interface programs that will allow it to function seamlessly with the City's future replacement of its J.D. Edwards enterprise software.**

## H. ELECTRONIC PLAN SUBMITTAL

An emerging use of the Internet is electronic plan submittal and distribution, thus allowing migration to more of a paperless office. The Equalizer software system allows electronic documents to be attached to plan review folders thus facilitating this functionality. Most plans are being produced by electronic CAD programs by designers that may be anywhere in the world. These electronic plans can be exported to file formats (DWG or DWF) that can be viewed by inexpensive viewer software that have redlining capability. There is free viewer software available for download, Design Review being one that is available from [usa.autodesk.com](http://usa.autodesk.com). This software works quite well in reviewing electronic plans, having imbedded features such as

square foot checks and travel distances, plus allowing online redlining. Deploying this functionality will allow plans to be submitted instantly from any place in the world and allows multiple reviewers located anywhere to make edits to a common plan set without having to move large rolls of paper around. Through the acceptance of electronic plan submittals and the use of redlining review software, processing efficiency can be gained. To make this transition Troy needs to provide review staff with the proper hardware and software to review plans online and to start accepting electronic plan submittals. Any PC that has been purchased in the last few years will perform adequately, but larger monitors to view plans proficiently will be needed. Some jurisdictions are utilizing dual monitors, two 19" and 21" or a single 30" monitor or larger. This type of processing is not just limited to electronic plan submittals as paper plans can be scanned and economically converted into electronic images such as Tiff or PDF formats once received. Receiving plans electronically is the better option however, because of low internal labor needed and that DWG and DWF formats are easier to view with the viewer software that is available.

**21. Recommendation:** Troy should consider beginning the process of migrating toward electronic plan submittal and review.

**22. Recommendation:** Purchase larger monitors for viewing plans online.

**23. Recommendation:** Start accepting and encouraging designers to submit plans as DWG or DWF file formats or other acceptable file formats.

## I. ARCHIVAL SYSTEMS

Retention of documents in paper format is no longer cost effective because conversion to electronic storage has become more economical in the long term. Troy's current partially deployed automation system has the capability of attaching electronic documents to either plan review or permit files. These documents can be paper documents that have been scanned and converted to an electronic format or e-files that have been submitted directly. Even with an asserted effort to encourage electronic submittal of documents, a certain percentage will still be submitted and reviewed on paper. There is also a large number of existing documents that are in paper that should be converted to electronic images. Transitioning to an electronic submittal process will only take care of new plans that are submitted electronically and therefore a document imaging technology will still be needed.

The advantages of converting to electronic files are quite extensive. Having files stored electronically allows them to be assessed rapidly. It greatly reduces the amount of space allocated to document storage. It provides the ability to protect files through

low cost redundant back-ups, thus providing greater security from being damaged or lost. It eliminates misfiling of documents so files are no longer misplaced or permanently lost. It allows rapid access to documents from any PC and allows multiple users to view documents simultaneously. It allows documents to be made available for direct access to the public through City provided kiosks or over the Internet. User log on identification can limit access to certain documents by making them view only on kiosks that have no printer capabilities.

Most documentation created or possessed by Building, Engineering and Planning Departments is considered public information and different types of information have different retention requirements. Every municipality will have slightly different interpretations of the legal requirements stipulated by code, law or local ordinances or policies and therefore need to develop their own document retention policies in consultation with their legal advisors.

Development services departments possess an enormous volume of data and the management of this data is key to cost containment. The newest term that deals with this subject is Information Lifecycle Management, (ILM). This term describes the management of data from its creation through deletion based on established retention schedules. Current law is careful to not stipulate any specific required storage medium. The predominate forms of archival being used today are paper, microfilm, microfiche, or electronic. The key to determining what storage medium is appropriate is based on the following factors.

- Volume of data to be retained and hence storage capacity needed.
- Is concurrent access to data needed or desired?
- What speed to access the data is needed?
- How long is the retention period for the data being retained?
- Ease of generating redundant archival to protect documents in case of a disaster.
- Is automatic deletion of records desirable at the end of the retention period?
- Ease of migrating documents to newer technological formats.
- Long term costs (cost benefit analysis) of the different options available.

A cost benefit analysis is not easy to accomplish because many of the benefits obtained through utilization of modern technology are externally obtained by customers, which is difficult to measure or assign a cost benefit. The basic elements to consider when performing a cost benefit analysis are the following:

- Does system provide redundant backup of documents and associated cost of providing redundancy?

- How much space is allocated to plan and permit file storage and what is the cost of the space?
- How many staff positions are allocated to retrieving plans and permit files and what is the cost?
- How much staff time is wasted waiting for plans or permit files to be made accessible?
- What types of delays are incurred by customers waiting for plans or permit files to be made available?
- What are the estimated costs incurred by the construction industry in resolving construction problems that are related to delayed access to plans and permit files?
- How many plans or permit files are not available immediately, temporarily misplaced or lost?
- Are the plans and permit documents that are legally required to be maintained deteriorating?

Jurisdictions having completed a cost benefit analysis are increasingly instituting electronic archival systems because of the small storage space required, rapid document availability, the elimination of lost or misplaced documents, the ease of document management, the ability to provide redundant protection of information, the ease of customer access to documents, and the ability to review documents over the internet.

The predominate electronic storage method being used is based on WORM (write once, read many) technology. WORM storage is a data storage technology that allows information to be written to storage media a single time, preventing the user from accidentally or intentionally altering or erasing the data. Developed in the late 1970s and widely used since the early 1980s, optical storage technologies were the first to implement mainstream WORM storage. Offering fast access and long-term storage capabilities, optical WORM storage has historically been used for archiving data that requires a long retention period. Three technologies have emerged in this area that provide document archival compliance, Disk-based WORM, ultra dense optical (UDO) and WORM tape. The following Table 2 is a comparison presented in a white paper published by HP that is useful in determining what direction is best.

**Table 2**  
**Electronic Storage Comparisons**

<b>Valuation Concerns</b>	<b>Disk</b>	<b>UDO</b>	<b>Tape</b>
Data capacity	Multi-terabytes	Terabytes	Multi-terabytes
Concurrent access provided	Yes	Yes	No
Access method	Random	Random	Sequential
Speed of retrieval	Highest	Seconds	Minutes
Retention period	Longest	50 years	30 years
Automatic migration of data	Yes	No	No
Automatic deletion	Yes	No	No
Cost/GB	Medium	Medium	Low
Environment control Req'd	No	No	Yes

Once a cost benefit analysis is completed we believe the conclusion supports the utilization of disk-based storage for documents that are actively being processed or have a limited retention life and UDO storage for long term plan storage and redundant backup. If documents are created electronically, disk based storage allows rapid viewing and if augmented with proper viewing software allows electronic redlining capability. Either storage medium allows rapid access to documents that can be viewed by multiple users simultaneously with web browsers and therefore allows documents to be stored in electronic format immediately and allows access over the internet.

**24. Recommendation:** Troy should conduct a cost benefit analysis to determine which storage medium is best to meet the particular storage needs of the development related departments.

**25. Recommendation:** Make sure archival system selected is capable of being Web enabled.

**26. Recommendation:** If an electronic archival system is established, archive plans immediately after permit issuance.

## J. GEOGRAPHIC INFORMATION SYSTEMS

The primary responsibility for Geographical Information System (GIS) application development and data maintenance is with a small group of staff within the IT Department. This staff performs a comprehensive array of GIS-based mapping services for all departments within the City. Work is performed mainly with the ESRI suite of GIS products including ArcInfo, ArcMap, ArcIMS and SDE. It appears that staff is highly proficient and service-oriented. The GIS administrator is very active in Statewide user activities and is a frequent technical speaker at various events.

Overall, the Troy's GIS resources, capabilities, and organization should be highly commended.

Oakland County maintains and provides land parcel GIS data and digital aerial photo coverage. Troy is fortunate to have direct interconnection with County GIS servers, and receives current parcel data at no cost. While the County is striving to enhance its level of GIS support and development services for constituent municipalities, the Troy staff has not required these services due to its own high levels of competency.

### Observations and Issues

ESRI products have become the general standard for GIS practices in Planning Departments throughout the world. Troy's small GIS staff has demonstrated its capability to support the needs of all City departments in their various uses and needs for GIS. Nevertheless, some of the Planners are continuing to use the Microstation CADD program for mapping instead of Arcview or ArcMap. This is mainly due to personal preference on the part of the individuals involved. This practice is inherently inefficient, raises cost issues, and perpetuates a compatibility issue that could face the Department for many years to come.

**27. *Recommendation:* Discontinue the use of Microstation and require the use of ArcMap or other appropriate ESRI products for all GIS activities.**

**28. *Recommendation:* Ensure that adequate GIS training and support are provided to the Planning Department staff.**



# V. BUILDING AND INSPECTION DEPARTMENT

## A. PROFILE

### **Authority**

The Building and Inspection Department reports directly to the Assistant City Manager/Economic Development Services and is under the direction of the Director of Building and Zoning. The Building and Inspection Department enforces the following Codes, as amended by the State of Michigan:

- 2003 International Building Code (IBC)
- 2003 International Residential Code (IRC)
- 2003 Michigan Plumbing Code
- 2003 International Mechanical Code (IMC)
- 2002 International Electrical Code (IEC)
- Michigan Uniform Energy Code
- 2003 International Fire Code (IFC)
- 2006 International Existing Building Code (IEBC)

### **Basic Functions**

The Building and Inspection Department performs the following basic functions:

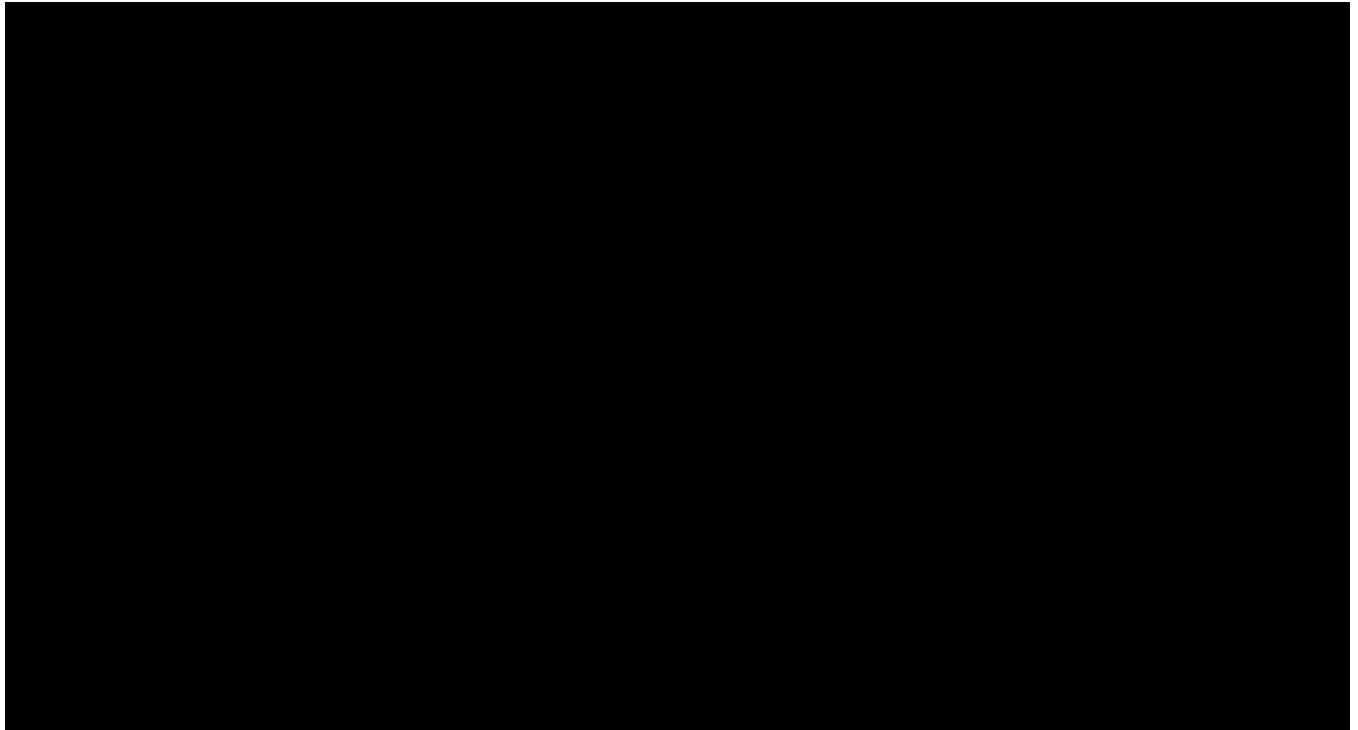
- Functions as a coordinator between themselves, Fire, Engineering, Planning, Public Works, and Parks and Recreation by performing all plan review intake and permits issuance for construction permits.
- Conducts plan check for building, plumbing, mechanical, electrical permits.
- Conducts inspections using specialty inspectors for all construction.
- Maintains building permit files.
- Issues Certificates of Occupancy.
- Acts as a clearing house for zoning compliance.
- Administer City licensing of contractors.
- Provides technical support for the Board of Zoning Appeals.
- Provides technical support for the Building Board of Appeals.

- Eliminates blight in the City by providing Code Enforcement to control property maintenance (inoperable cars, trash, abandoned structures, weeds, and signs of all types).
- Performs multiple housing inspections for three of more rental unit complexes.

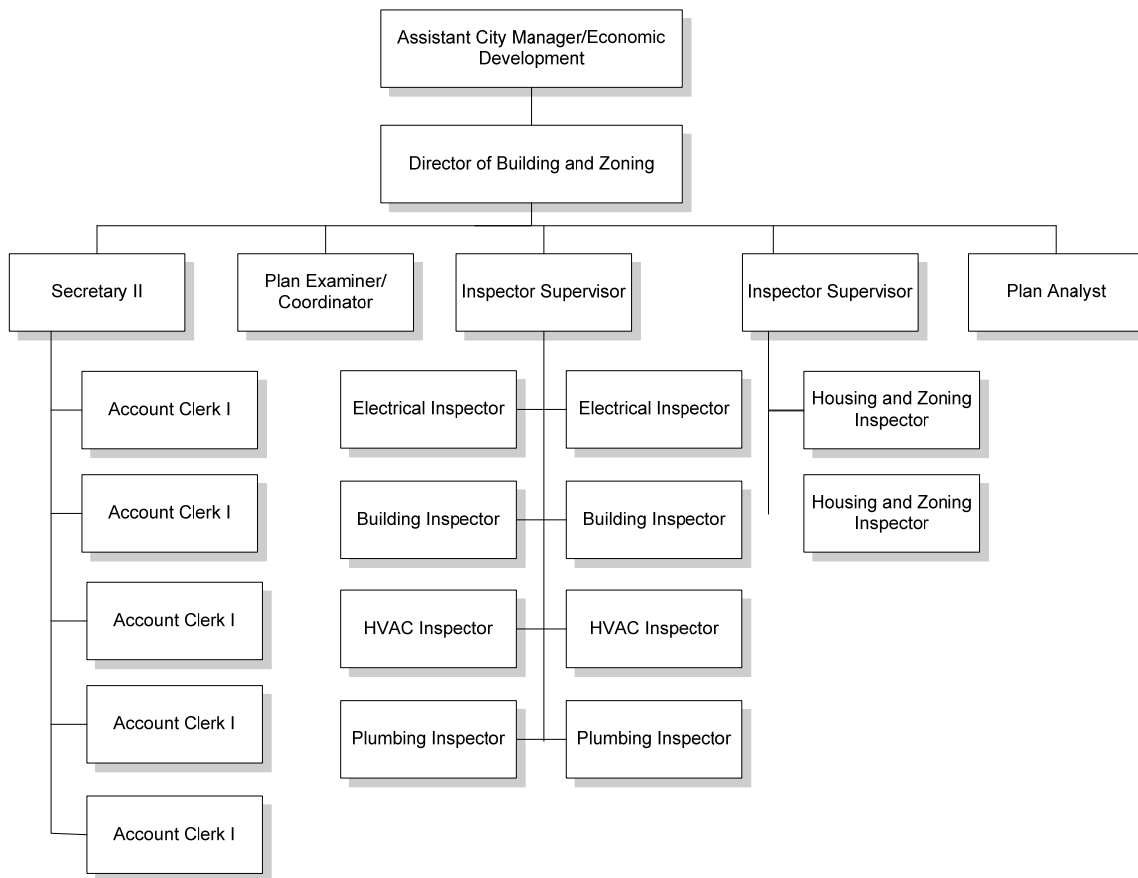
### **Organization**

Under the direction of the Director of Building and Zoning there are 21 full-time positions and two part-time positions. Table 3 shows actual current staff positions and classifications and Figure 2 shows the organizational structure.

**Table 3**  
**Building Inspection Department Staff**



**Figure 2  
Building Inspection Department Organization**



**Positive Findings**

- Staff is generally friendly and helpful.
- Staff will expedite the plan review or permit issuance process of a project if special needs are associated with a project.
- The Department provides next day inspection response approximately 99% of the time.

**B. PERMIT, INSPECTION AND REVENUE ACTIVITY**

**Permit Issuance and Inspection Activity**

Table 4 lists the last five years and the first six months of 2007 activity levels relative to the issuance of building permits only. The Department does not tack sub-trade permit issuance, or total inspections performed, (Building, Plumbing, Mechanical, Electrical, code enforcement and Housing).

**Table 4  
Building Permits Issued and Total Inspection Performed**

	2002	2003	2004	2005	2006	2007 1 <sup>st</sup> 6 Months
Total Inspections	35,141	38,459	40,622	37,902	40,375	
Building Permit Issued	1,832	1,984	2,127	2,136	1,682	848
Percent Change	-	8.30%	7.20%	0.40%	-21.30%	

Figure 3 graphically illustrates the trends that have occurred in building permit issuance over the last five years.

**Figure 3  
Building Permits Issued**

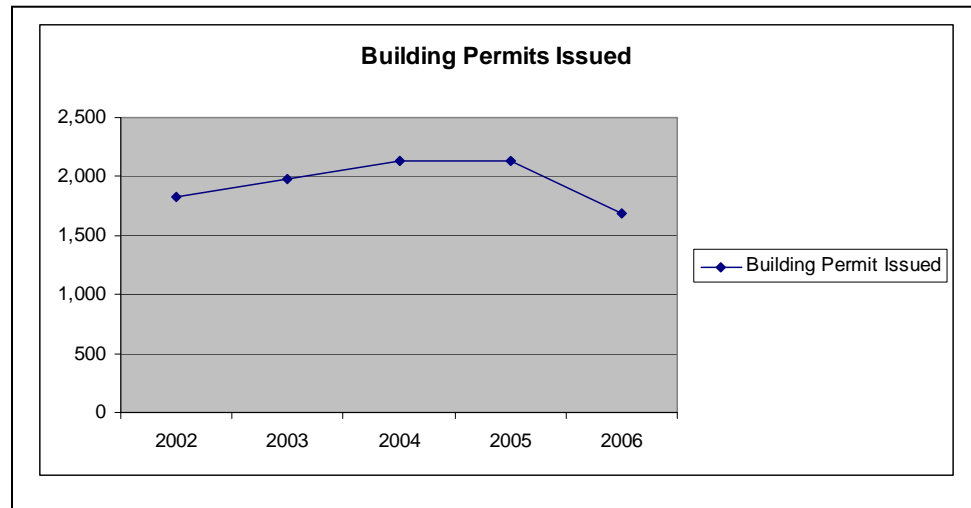


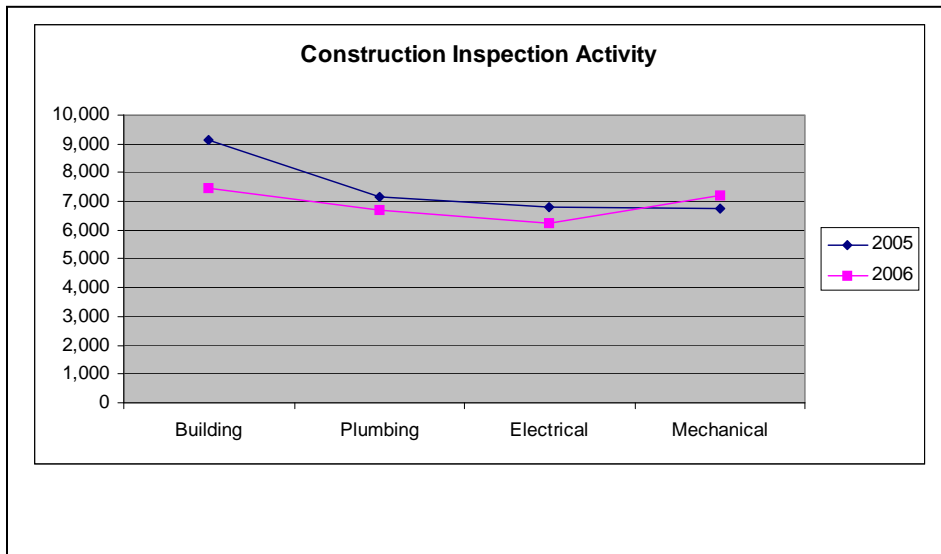
Table 5 lists construction inspection activity over the last two years. It should be noted that the primary reason construction inspection activity has remained relatively flat is because the inspections performed data does not accurately represent requested activity volumes. The Troy Building Inspection Section generates their own inspection workload by performing unscheduled follow-up inspections on expired non-final permits where no inspections have been requested. An asserted emphasis is given to these follow-up inspections in order to maintain a constant productive workload. But as a result of this practice, the count of inspections being performed does not accurately represent workload demand and therefore does not match the trends associated with the decline in building permits issued or valuation declines.

**Table 5  
Construction Inspection Preformed**

	2005	2006
Building	9,142	7,458
Plumbing	7,158	6,697
Electrical	6,812	6,252
Mechanical	6,753	7,219
<b>Total</b>	<b>31,870</b>	<b>29,632</b>

Figure 4 graphically illustrates the data presented in Table 3.

**Figure 4  
Construction Inspection Activity by Trade**



**29. Recommendation:** To accurately assess total permit issuance activity, issuance of sub-trade permits should be tracked in addition to building permits issued.

**30. Recommendation:** Construction inspection activity tracking should differentiate between scheduled inspection, which accurately reflects workload demand, and self-generated inspections.

## Building Permit Valuation History

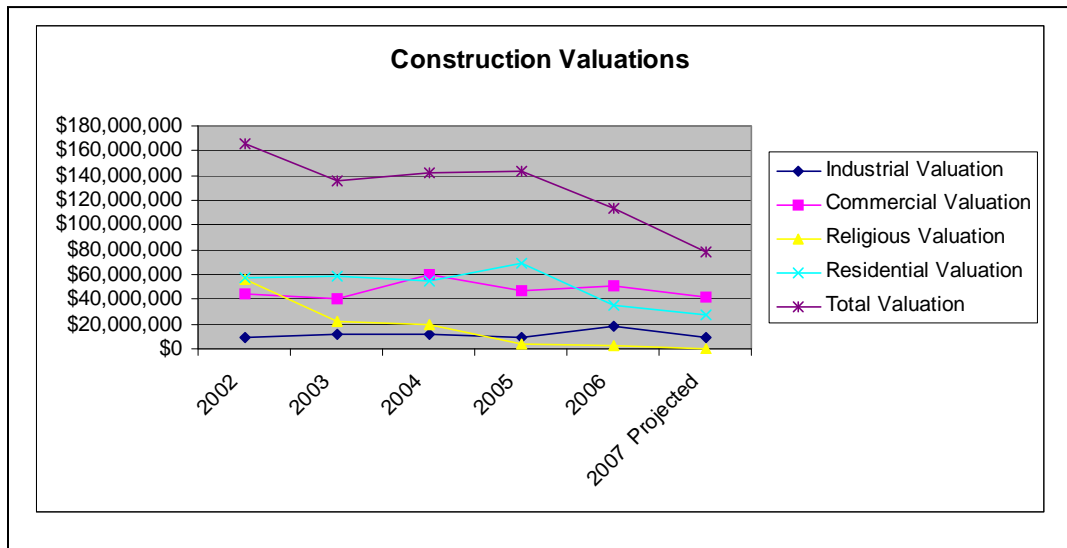
Table 6 lists valuation trends by major sector over the last five years and a projected valuation for 2007 by doubling the first six months of activity.

**Table 6**  
**Building Permit Valuations by Major Sector**

Construction Valuations	2002	2003	2004	2005	2006	2007 Projected
Industrial Valuation	\$8,801,030	\$12,031,025	\$11,989,241	\$8,792,326	\$18,400,555	\$9,548,158
Commercial Valuation	\$43,775,511	\$40,849,341	\$60,468,296	\$46,950,440	\$50,277,656	\$42,019,018
Religious Valuation	\$55,906,383	\$21,564,783	\$19,361,075	\$4,120,275	\$3,156,400	\$192,000
Residential Valuation	\$56,771,607	\$59,262,523	\$54,986,132	\$69,030,245	\$35,403,172	\$26,905,012
Total Valuation	\$165,394,532	\$135,885,515	\$142,120,452	\$143,697,546	\$113,501,893	\$78,664,188
Percentage Change		-17.80%	4.60%	1.10%	-21.00%	-30.70%

Figure 5 graphically illustrates the trends that have occurred in building permit valuations over the last five years plus a 2007 projected valuation based on doubling of the first six months of activity.

**Figure 5**  
**Construction Valuations of Building Permits**



## Revenue Verses Budget History

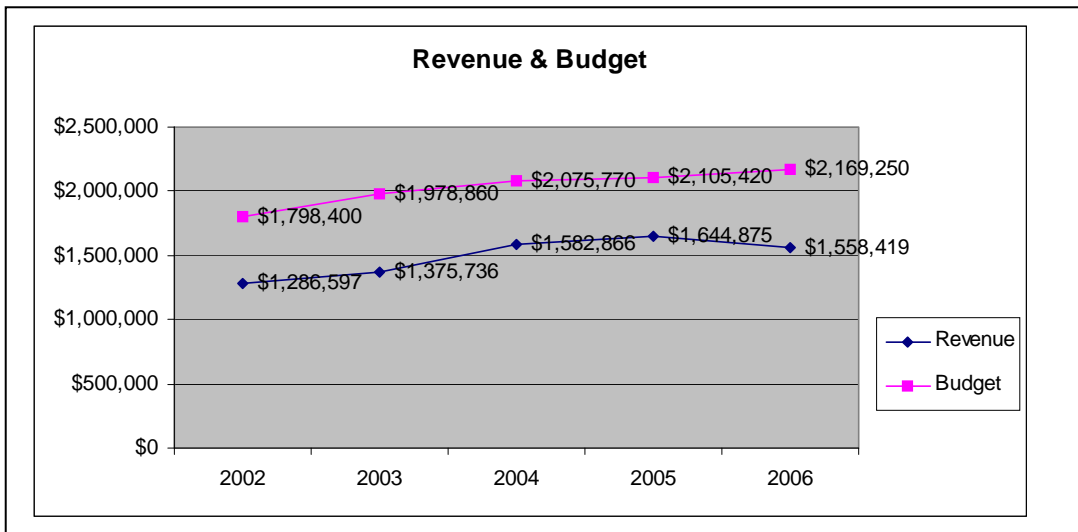
Table 7 lists revenue flow compared to budgeted costs over the last five years.

**Table 7  
Revenue Verses Budget**

	2002	2003	2004	2005	2006	2007
Revenue	\$1,286,597	\$1,375,736	\$1,544,550	\$1,532,967	\$1,538,486	1,399,077
Budget	\$1,798,400	\$1,978,860	\$2,090,285	\$2,104,959	\$2,161,325	2,224,124
Cost Recovery	-\$511,803.00	-\$603,124.00	-\$545,735.00	-\$571,992.00	-\$577,839.00	-\$825,047.00

Figure 6 graphically illustrates the relationship between revenue being generated from permit activity and expenditures associated with actual budgetary costs. For the last six years the building department's cost have exceeded revenue by approximately \$600,000 a year.

**Figure 6  
Revenue Cost Comparison**



## C. ORGANIZATIONAL ISSUES

### Certification of Staff

One of the best tools to ensure that Building Division staff have learned and maintained their knowledge skills is to require inspectors and plan reviewers to become certified in the areas relative to their assigned duties, where maintenance of certification requires ongoing education. The State of Michigan has accomplished this through their licensing requirements for plan review and inspection staff.

## **Customer Input and Feedback**

The Building and Inspection Department has not established customer feedback groups to partner with, such as the chamber of commerce and different construction organizations. These groups provide an excellent forum to obtain customer input before establishing policies, procedures or targeted processing timelines. The Department should consider establishing customer focus groups to meet with on a regular basis. These groups are extremely valuable if partnered to identify needed changes before problems arise and to design an implementation strategy that works for both parties. These groups are very useful in establishing a proper fee structure that provides sufficient revenue to maintain proper staffing levels, equipment and deployment of automation. These groups are typically made up of members that truly understand that a quality service costs more and they are desirous of quality over lower costs.

**31. Recommendation: Establish one or more customer feedback groups to provide guidance in establishing processing procedures and time lines to facilitate the construction process. The Chamber of Commerce, construction organizations and a committee with a cross-section of the community are acceptable focus groups.**

## **Fees**

It is important to realize that development/permit fees are a very small part of the total construction cost. Delays in construction schedules or time invested to obtain permits are the most costly. When establishing budgets or proper fee assessments, the total cost of obtaining service must be assessed by looking at costs incurred by customers not just the internal cost of delivering service. For example, when assessing the value of deploying electronic permit issuance and tracking systems, the greatest percentage of savings is the result of the customers not having to wait to obtain requested information and thus receiving more rapid service. Automation can actually increase the costs of initial data processing but will save time for subsequent users of the data by rapidly speeding up data retrieval and enhancing communication. Therefore focusing solely on the cost of initial internal staff processing time compared to cost of automation will provide an inadequate assessment of cost savings. The time saving of all subsequent users of the data must be accounted for. The time spent by customers to obtain information or permits must also be accounted for. The time invested by applicants to obtain City approvals is ultimately passed along to the end consumer, hence low service fees that provide slower service do not equate to lower incurred costs to the end customer. Delays in getting plans approved, permits issued or inspections performed will have the greatest cost impacts. Requiring staff to carry workloads that are excessive will result in a lower quality service which can also have detrimental effects on customers by not discovery problems in a timely manner or



allowing substandard construction to occur. Inadequate staffing levels or delays in acquisition of staff or other needed resources due to a lack of revenue flow or expenditure of revenue is counter productive. Proper staffing levels and highly trained staff must be maintained to ensure rapid response to the construction industries timetables. Taking full advantage of automation will greatly enhance customer service capacity by providing accurate information quickly thus allowing decisions to be made promptly. In Troy, we believe the reason adequate staffing has not been maintained consistently and that automation has not been deployed fully is because of inadequate revenue. If this is true, fees should be raised to maintain deployment of the state of the art automation systems and to maintain adequate staffing levels to ensure consistent quality service levels. Fees assessed should be based on the actual cost to deliver a quality service.

**32. Recommendation: Reassess fees assessment relative to workload and establish fees based on actual costs.**

A minority of non-cooperative customers (individuals that do not willing comply with regulations) can have an adverse effect on the majority of complying customers by consuming disproportionate amounts of time. The fee structure deployed should reward cooperative customers that consume less staff resources and assess higher fees for non-compliant customers that consume excessive amounts of time. A system that deploys monetary rewards and penalties for desired behavior is one of the best ways to train customers to exhibit desired cooperative behavior. Assessing re-inspection fees for non-compliance with previous corrections requested or assessing additional plan review fees for not making requested corrections are methods that can modify behavior if deployed with consistency. Troy has the capacity of doing both and should program the assessment of these fees into their automation system.

**33. Recommendation: Implement a fee methodology that encourages desired behavior and discourages egregious behavior.**

### **Investing in Staff**

The two most important elements in providing quality service are establishing goals and standards of what constitutes acceptable service levels, and having staff that are energized and empowered to meet the established goals. In order to empower and energize staff, an organization must invest in them by providing them with adequate resources and treating them with trust and respect. They should be included in the critical decision making processes so that they have ownership of the program and support the high quality service levels that they helped define. Statements made by numerous staff in Troy is that the first time they hear about a new policy or direction is when a customer refers to it. Many made statements that management never asks

for staff input and is not supportive in providing adequate resources. These impressions generate demoralized attitudes that have detrimental effects on customer service.

It is clear that current management is desirous of being more progressive in making changes in the organization. It is highly recommended that more focus be given to obtaining staff input and making sure they are included in the process improvement effort. The successful implementation of a well thought out plan ultimately lies in the hands of the working staff. Success is a direct result of how much they embrace the goals and how energized and empowered they are.

What energizes staff is having enlightened leadership within an organization that can articulate a vision and empowering individuals to fulfill the vision. There must be a unified voice from upper management delineating the vision. This necessitates that upper management across departmental lines work through their differences to create a unified message before any discussion occurs with other staff. Once this is accomplished the agreed upon vision needs to be shared with supervision and allow them to provide feedback. The supervisor's constructive feedback needs to be incorporated into the vision. The supervisory staff should then disseminate the message to the line staff for discussion and feedback with the results communicated back up the line. It is important to utilize the chain of command structure when initiating discussion regarding changes and to allow each level of staff in the organization to have a voice in the process.

**34. Recommendation: Emphasize staff input for the improvement efforts.**

### **Quality Control Assessments**

To measure quality a number of approaches may be utilized. A percentage of completed plan reviews or inspections should be reviewed by a supervisor. This should be a sampling of projects rather than part of the normal review process. To empower staff it is important to trust them and allow them a fare amount of autonomy, but total free reign is not appropriate. Utilizing customer surveys that target measurements of quality are also useful. Having standing staff meetings where staff can share observed problems is also very valuable. These meetings should be scheduled on a regular basis and at a frequency determined by the number of issues needed to be discussed.

**35. Recommendation: Establish a quality control system for each section that does not impede employee empowerment.**

## **Staff Meetings**

Staff indicated that staff meetings are almost never held, which has resulted in inconsistent application in code enforcement and lack of awareness of current regulations. At a minimum, we suggest that staff meetings be held every two to three weeks. Part of the meetings should be an up-date on processes, discussing the Department's mission, and various training.

**36. Recommendation:** The Building Inspection Department should hold staff meetings every two to three weeks.

## **D. PLAN SUBMITTAL, PERMIT ISSUANCE AND INSPECTION REQUESTS**

### **Counter Operation**

The counter operations are staffed by a supervising Secretary II position and five Account Clerk positions. The supervisor oversees the counter operation as well as oversight of travel expenses, and staffing allocations (attendance, vacations, and sick leave). The counter staff do all plan intakes, administer licensing, issue permits, process inspection requests, post inspection results into Equalizer (the electronic inspection tracking system), and serve as the initial point of contact for general phone calls.

The Building Inspections Department is the central point of submittal for all Building Permit project reviews required. They act as the coordinators for review activities between themselves, Structural, Fire, Engineering, Planning, Public Works, and Parks and Recreation. Building issues permits for several departments, (Fire, Engineering, Water, Parks and Recreation). The counter staff is the initial and last point of contact for each of these functions.

### **Plan Submittal Process**

At time of application for commercial projects, applicants are required to submit five copies of site engineering drawings, four copies of building plans, and two copies of specifications. An assigned counter staff position does the intake and logs the plans into an Excel tracking log. They then route plans to the other review departments as needed, as well as all internal review staff.

For residential projects four plots plans and two building plans sets are required and a grading plan must be on file for the property or one must be submitted. An assigned

counter staff position does the intake and logs the plans into an Excel tracking log. Then they route plans to the residential reviewer or Engineering if necessary.

The current routing and transmittal process being used in Troy is paper driven. This method of transmittal and communication is rather outdated given the automation technologies that exist and could be utilized. Troy could deploy an electronic plan review tracking module that will identify which reviews are needed and route review tasks to the other departments electronically. The electronic system should allow review staff to log their comments and review status and track time of submittals, i.e. processing times and actual review times. All fees associated with reviews or clearances should be generated through this module and collected at one central location. If properly deployed, the current “Final Site Plan Approval Checklist/Authorization Summary” form would be replaced by automated tracking.

**37. Recommendation: Deploy the automated plan review module provided by Equalizer and incorporate the above mentioned features.**

An emerging use of the Internet that should to be deployed in conjunction with a plan review tracking module is electronic plan submittal and distribution, thus allowing migration to more of a paperless office. The Equalizer software system allows electronic documents to be attached to plan review folders thus facilitating this functionality. This is discussed in greater detail along with recommendations in Chapter IV.

## **Permit Issuance**

Michigan state law requires that permit holders must be licensed in the trade for which the permit is being issued with the exception that a homeowner, if doing their own work or functioning as the building contractor, can obtain a building permit. The City of Troy also licenses contractors allowing them to conduct business within the City. The permit counter staff administers this licensing function. Because of the State licensing requirement, currently all projects are issued separate permits for each trade and sometimes multiple trade permits are issued.

The current practice necessitates the issuance of numerous permits on every project and results in many individual transactions. It also necessitates numerous contractors for every project to drive to City Hall to obtain permits. This practice, even though rooted in State law, is highly inefficient and alternatives to streamline this process need to be explored.

One approach could be to have a single agent for the project provide all the contractor information. Each legally responsible contractor would be the designated permit holder but permit issuance would be consolidated into a single transaction. Another

improvement that would help facilitate single permit issuance is to automate the permit issuance process and administer permit issuance over the Internet. Many jurisdictions that have similar legal constraints have accomplished this. There are many ways to approach permit issuance over the Internet and still maintain security, user identification and even obtain electronic signatures, if needed. Federal law has addressed this issue and removed the legal obstacles that existed prior through the passage of the Electronic Signatures in Global and National Commerce Act passed by Congress on June 30, 2000. What some jurisdictions have done is establish user logon ID's that are administered based on the legal limitations associated with their municipality. Evolving to electronic permit issuance provides enormous efficiency internally and to customers because they no longer need to physically come to City Hall. All permits, whether associated with plan reviews or issued without plan reviews such as many sub-trade only permits, can be issued over the Internet. If the E-permitting system is designed properly, all sub-trade only permits could be self administered by pre-registered contractors using a secure log-on identification system.

**38. Recommendation: Change the permit issuance methodology to a more integrated permit issuance process.**

**39. Recommendation: Automate permit issuance so that permits can be administered over the Internet.**

### **Inspection Request, Distribution and Tracking**

Currently, all inspection requests are phoned in and recorded on voicemail. Recorded inspection requests are extracted and manually recorded on individual inspection request forms and a separate summary log. Clerical staff do this at 2:30 PM and then again at 6:30 AM each day. The inspections are segregated initially by an east west distribution by trade and then balanced by number by shifting inspection requests from the east/west assigned inspectors. The individual inspection request forms are completed by the inspectors after completion of inspection and returned to the office staff at the end of the day. The inspection results are then entered by clerical staff into the appropriate corresponding permit file in the Equalizer database.

Troy's current system is mostly a manual system and labor intensive. Alternatively, there are two automated utilities being used by many communities: Interactive Voice Response (IVR) and/or an Internet access through a web portal. Both means of access should directly interact with the permit database. The most common deployments utilize the permit number assigned by the automated system to access the permit file, which returns a confirmation to the user that they have accessed the correct file. Most systems deploy a utility that allows the caller to be identified by either speaking their name and phone number or entering this information using their phone pad or

keyboard. Some municipalities assign user ID numbers to customer data files, allowing their names and phone numbers to be automatically populated once entered. All data being entered or populated through an IVR system should have confirmation features designed in. Most systems allow the user to select from a predetermined list of inspections, thus providing control of inspection being requested. The system needs to be enabled with the ability to select date of inspection and, if appropriate, specify desired time of inspection. Inspections are stored in the database associated with the designated permit file and typically in a temporary file that corresponds with the date the inspection is scheduled to be performed.

Geographic location data can be populated (east or west or even street map location data), thus allowing the first cut of inspection distribution to be automated. A supervisory over-ride utility that allows distributions to be manually changed should be built into the system to facilitate fine tuning. Jurisdictions that have fully automated, i.e. deployed electronic access and posting capabilities to inspection staff, skip the task of printing out the inspection notices and typically distribute work loads to inspectors electronically. In fully automated jurisdictions, inspectors have no need for inspection slips because they have full access to all information directly.

**40. Recommendation: Troy should consider use of an automated inspection request system.**

### **Posting of Inspections**

Some jurisdictions that have not deployed automation to the field inspectors have automated the posting process by utilizing optical character recognition (OCR) technology. This technology allows inspection results that are recorded on paper to be scanned and posted back to the permit file automatically. This deployment is generally utilized where field staff are not responsive to automation. It provides an advantage in posting data because it ensures that inspection results are posted to the correct file and the actual written comments can be captured, as well. If this option is utilized it is best to incorporate a bar code into the inspection form, an inspection ID number that identifies the specific inspection being requested, and the associated address and permit file.

The best options that provided the greatest accuracy and overall efficiency is to deploy rugged wireless laptops or PDA's to the inspectors providing them with direct access to the data files they need and allowing them to post their inspection results immediately. By doing so, every customer and inspector has immediate access to the up to date status of the project. Decisions that need to be based on other activities are known as soon as they are posted and knowledgeable decisions can be made accordingly. Sometimes inspectors fail to make the correct calls or do not proceed

with an inspection because they are not sure of the current status. Having ready access to current information improves efficiency for both the City and the customer.

**41. Recommendation: Troy should use field computers for the inspectors.**

### **Providing Customer with Inspection Results**

In fully automated jurisdictions, inspection results are communicated back to the customer by either IVR, web access or field printed notices from printers usually installed in the vehicles. Once the posting process has been fully automated all three options are easily accomplished. What this provides the customer is instant access to inspection results so that they can plan their next activity correctly and in real time.

Some jurisdictions are concerned with providing the general public access to inspection results, particularly correction notices, and therefore have taken precautions in how this information can be accessed. One method is to assign identification numbers to all customers and require them to enter this ID to access information. By doing so, access to information can be limited to individuals that are already associated with the permit file.

**42. Recommendation: Troy should include providing inspection results to its customers as part of the automation system.**

## **E. PLAN REVIEW**

### **Organizational Structure**

The plan review section is staffed by one full time Plans Examiner/Coordinator, one Plan Analyst, and six sub-trade Inspectors on an as need basis. The Plans Examiner/Coordinator does all commercial/industrial building plan reviews and provides plan review coordination between the other departments and the applicant. The Plan Analyst reviews all residential projects and helps backfill staffing shortages in inspections or in Code Enforcement. There is one Account Clerk I position that is assigned to this section to help facilitate the assembly of correction comments, and getting completed plan reviews ready for permit issuance, (stamping plans approved, generating fees, tracking completion of other departmental reviews, etc.). The Building and Inspection Department does not have internal structural expertise; therefore this review service is contracted out. The plumbing, electrical and mechanical reviews are assigned to the sub-trade inspectors by site location, (east or west).

## Plan Review Activity

The Building and Inspection Department has been tracking commercial building plan reviews since 2002 by utilizing a tracking Excel log, has been tracking residential building reviews for a little over a month utilizing another Excel tracking log, and does not track sub-trade reviews at all. Appendix E has the commercial plan review submittals as entered by staff over the last five years with 2007 data being year to date submittals as of August 13, 2007. The original data was consolidated into major project categories that were more suitable for analysis and similar to the data categories being tracked at permit issuance. Table 8 lists this reformatted commercial data and Table 9 lists residential projects that were permitted in 2006.

**Table 8**  
**Commercial Plan Review Data Listed by Major Categories**

<b>Project Type</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007 Projected</b>
Add Alts	3	1	1		
Additions	22	10	8	8	5
Alterations	302	330	361	342	194
NC Partial	2			1	
New Construction	23	16	23	31	28
Site Alteration	9	8	6	13	3
Small Alterations	47	47	36	47	34
Grand Total	408	412	435	442	264
Percentage Change		1.00%	5.60%	1.60%	-4.40%



**Table 9**  
**2006 Residential Plan Review Data Listed by Major Categories**

<b>Category</b>	<b>Number</b>
Single Family	
New	87
Add Alt	342
Garage/Acc	71
Pool Spa	53
Wall/Fence	1
Repair	22
Fire Repair	16
Temp Sales Trailer	1
Wreck	31
Fnd/Slab/Rat wall	1
<b>Subtotal</b>	<b>625</b>
Town House/Condo	
New	60
Add Alt	51
Wall/Fence	1
Temp Sales Trailer	1
<b>Subtotal</b>	<b>113</b>
Multiple	
Add Alt	2
Garage/Acc	5
Repair	3
<b>Subtotal</b>	<b>10</b>

**Analysis of Plan Review Workload & Staffing**

Table 8 data indicates that the projected total number of projects being submitted this year is in decline. The total number of projects being submitted does not accurately indicate actual workload however, because some projects have longer review times associated with them. Therefore the project review categorizes were assigned average review times listed in Table 10 and total review times were calculated. Based on this more refined analysis we believe commercial plan review workload has actually increased, even though number of projects being submitted has declined.

Table 10 calculates the number of commercial plan reviews hours needed, based on average assessed plan review times associated with each major category multiplied by the number of projects submitted per review category annually.

**Table 10**  
**Commercial Calculated Plan Reviews Time Required**  
**Based on Count of Major Projects Reviews Shown In Table 8**

<b>Project Type</b>	<b>Review Time Assessed</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Add Alts	5	15	5	5	0	0
Additions	4	88	40	32	32	20
Alterations	1.5	453	495	542	513	291
NC Partial	4	8	0	0	4	0
New Construction	16	368	256	368	496	448
Site Alteration	1	9	8	6	13	3
Small Alterations	1.5	71	71	54	71	51
Grand Total Hours Assessed		1,012	875	1,007	1,129	813
Percentage Change In Hours Assessed			-13.50%	15.10%	12.10%	15.30%

Note: 2007 percentage change is a projection based on current submittals as of 8/13/2007

For Residential projects the same assessment was done, listed in Table 11, but only for 2006 permit activity because the plan review tracking log was only recently established. The data being analyzed was extracted for permit issuance data, and hence should be relatively accurate with the exception of a few projects that may have had permits issued without being reviewed or reviewed projects that never obtained a permit.

**Table 11  
2006 Residential Plan Reviews**

<b>Single Family</b>	<b>Review Time</b>	<b>No.</b>	<b>Review Hours</b>
New	4	87	348
Add Alt	1.5	342	513
Garage/Acc	0.75	71	53
Pool Spa	0.75	53	40
Wall/Fence	0.75	1	1
Repair	0.75	22	17
Fire Repair	1	16	16
Temp Sales Trailer	0.75	1	1
Wreck	0.75	31	23
Fnd/Slab/Rat wall	0.75	1	1
<b>Subtotal</b>		625	
<b>Town House/Condo</b>			
New	4	60	240
Add Alt	1.5	51	77
Wall/Fence	0.75	1	1
Temp Sales Trailer	0.75	1	1
<b>Subtotal</b>		113	
<b>Multiple</b>			
Add Alt	1.5	2	3
Garage/Acc	0.75	5	4
Repair	0.75	3	2
<b>Subtotal</b>		10	
<b>Total Review Hours Assessed</b>			1,339

Tables 12 and 13 below calculate productive available hours as follows. Available average leave hours are subtracted from total annual paid hours to calculate available work hours, equally Net Time on Job. A daily productive percentage is calculated based on an assessment of how many hours on average are believed to be allocated to actual plan review. The .625 associated with commercial plan review assumes three hours per day will be allocated to helping customers at the counter, on the phone, email, answering staff questions, coordinating with other departments, etc. The .75 associated with residential plan review is higher because plan review coordination with other departments is not necessary and therefore a higher productive percentage should be possible. These productive percentages were used to adjust available productive plan review hours accordingly.

**Table 12  
Commercial Available Productive Hours**

<b>Category</b>	<b>Hours</b>
Annual Paid Hours	2080
Holidays	64
Personal	30
Vacation	120
Sick	40
Net Time on Job	1826
Daily Production Hours	5
Daily Productive %	0.625
Annual Productive Hours	1,141

**Table 13  
Residential Available Productive Hours**

<b>Category</b>	<b>Hours</b>
Annual Paid Hours	2080
Holidays	64
Personal	30
Vacation	120
Sick	40
Net Time on Job	1826
Daily Production Hours	6
Daily Productive %	0.75
Annual Productive Hours	1,370

When the available productive hours are compared to the assessed workload hours, the plan review staffing currently assigned appears to be balanced with the current workload of plans being submitted.

### **Current Plan Review Performance Targets**

The current plan review turn around targets for commercial projects is three to four weeks for the first review and one week to 10 days for the second review cycle. Sub-trade plan reviews are done on multifamily residential projects and all commercial industrial projects with a turn around target of three days. For residential addition projects the building review processing targets are five to seven days for 10 days for new residential construction, and same day for second reviews.

### **Assessment of Actual Plan Review Performance**

The Building and Inspection Department has been utilizing a tracking Excel log since 2002 for commercial building reviews, for residential building reviews for a little over a month, and does not track sub-trade reviews at all. Analyzing the data extracted from the commercial tracking Excel spreadsheet, the shelf time (days between date of submittal and start of review) and processing review days (date from start of review until permit issuance) were calculated. The results of this assessment are listed in Table 13.

What this commercial data reveals is that the average shelf times are actually quite good, but the maximum project delays from date of submittal until start of review are excessive. The average and maximum days attributed to the review cycle (days between start of review and permit issuance) are both considered to be excessive. These review cycle days are relatively non-definitive however, because Troy does not track the time a project is in the possession of the applicant as compared to being in the City's possession, which is a critical element that should be tracked. The City also does not track the sub-trade review process or other departmental processing timelines. Therefore, it is not possible to determine where the delays are actually occurring. It is possible to have extremely poor completion times without being attributed to City delays, but without measurements in place to track the actual review handoffs occurring; it is not possible to determine where the major delays are. Troy needs to track the following timelines for every review being performed.

- Date of submittal
- Date review completed and applicant notified
- Date of each resubmitted plans
- Date of each recheck completed and applicant notified
- Date of permit issuance

**43. Recommendation: Incorporate the above transaction dates in the data tracking system.**

Based on interviews with sub-trade inspectors, we were told that it is not uncommon for projects to not be reviewed for three to four weeks. These delays are occurring when inspection activities are high, and can also be attributed to giving priority to doing inspections rather than plan reviews. An emphasis is placed on performing at least 14 inspections a day, which is maintained by performing inspections on expired permits. Because there is no customer waiting for service to be performed regarding inspection on expired permits, we believe lower priority should be given to this function than plan review.

For residential projects, since the Building Department did not start tracking activities through a tracking log until July of this year there is insufficient data to provide an empirical assessment. But based on review of the one month of data and staff interviews, it appears the residential review process is being completed within acceptable review timelines.

**Table 14  
Review Commercial Time Assessment**

<b>Review Type</b>	<b>Average Shelf Time</b>	<b>Max Shelf Time</b>	<b>Average Review Days</b>	<b>Max Review Days</b>
Additions	6	13	27	62
Alterations	4	75	28	271
New Construction	5	44	38	125
Site Alterations	6	49	26	54
Small Alterations	6	51	34	133

**Recommended Plan Review Procedural Reassessments**

Based on the above analysis of comparing workload demand to available manpower it appears there is sufficient staffing to produce the incoming workload in a timely manner, but only if constant staffing levels are maintained. The backlogs in processing appear to be the result of having staff vacancies because of illnesses, where workload backed up. Once a backlog of workload has been generated it is difficult to eliminate the backlog without committing additional resource that are equal to the manpower shortages that created the backlog to begin with. If constant

staffing levels can be maintained, there should be no reason for excessive plan review delays to be occurring with existing staff. Therefore, to ensure a more consistent and timely review process four areas of improvement should be considered:

1. Internal processing changes to allow implementation of an expedited review process.
2. Utilization of outside staffing resources and adding additional staff to perform more of the non-technical tasks. This should produce a higher productive percentage to exist amongst review staff.
3. Change what data is tracked.
4. Utilizing automation more effectively.

Each of these is discussed below.

### **Recommended Expedited Plan Review Processing Alternative**

Local regulations and policies need to be routinely evaluated in terms of return on investment to assess if the processes are accomplishing sufficient value to warrant the delays and incurred cost. To facilitate rapid processing, procedures should have as few steps as possible and where multiple reviews are necessary they should be conducted simultaneously. If at all possible, redundant review processes should be eliminated and processes that overlap should be consolidated into a single review process by cross-training staff. If a task can be accomplished in a single event rather than multiple events an organization should consolidate the multiple steps into one process.

The most efficient review processes eliminate the warehousing operation entirely by scheduling reviews and performing the intake, completeness review, actual review and resolution of issues in a single meeting while the applicant is present. Eliminating warehousing will eliminate numerous intermediate processing steps, the need to intake, file, locate, re-file, relocate, and return plans to the applicant. The elimination of these steps greatly improves efficiency. Doing the review with the applicant present speeds up the process by facilitating orientation to design, helps to locate information on plans quickly, and improves the plan reviewer's focus, thus shortening the actual time spent reviewing. It also simplifies communications – no more phone tag or emails going back and forth. It also facilitates the resolution of problems immediately. A well-managed express plan review operation run by appointments is far more efficient, provides greater productivity, and much better customer satisfaction.

If multiple review disciplines are needed to complete review they should be scheduled to provide concurrent reviews at the same time if at all possible, but at a minimum should be performed the same day. Once review service functions have been identified, practical processing times needed by staff to complete a review are scheduled. Review services where the longest single review time needed is less than

two hours can be processed through a coordinated express plan review process, facilitated by an appointment system.

For example a plan review may entail the following:

- An intake process (creation of application folder) – 10 minutes.
- A zoning and life safety building review – 60 minutes.
- A structural review - 30 minutes.
- A plumbing review – 20 minutes.
- A mechanical review – 40 minutes.
- An electrical review – 20 minutes.
- A fire review – 30 minutes.
- Permit issuance – 15 minutes.

To facilitate this express plan review process an appointment would be scheduled with the applicant/designer(s). This appointment could be in person or a virtual meeting with the applicant via a video phone. At the appointed time the reviewer and designer would participate in the review. If corrections are minor in nature and can be corrected by the designer immediately a corrected set of plans could be created during the meeting. If the interface is in person the corrections could be initialed redlined. If the interface is a virtual one, the original plans could be corrected and sent electronically. At the end of the review process the applicant will either have permit approval or a detailed list of corrections. If all reviews were conducted simultaneously and approved, the design team would receive the 225 minutes of processing and review in a little over an hour and leave with a permit in hand. This ideal processing scenario would not be possible in Troy without utilizing contract plan review services for sub-trade plan review. Because assigned sub-trade plan review staff are performing dual roles, their appointments could probably not be coordinated with other reviews. They still could be scheduled the same day as the building reviews, and grouped together one after the other at appointed times. To maximize efficiency for both the applicant and staff and allow some latitude for review completion, the interface should be conducted virtually, with appointments scheduled with some flexibility and initiated when prior reviews have been completed.

This processing method has been deployed by a number of jurisdictions in the San Francisco Bay Area, mostly utilizing in-person interfaces. Virtual interfaces have been utilized by the city of San Jose in conjunction with electronic submittal, as well. With current available technology there is no reason an expedited review process could not be conducted in a virtual environment using electronic plan transmission and video conferencing, without requiring the designers to physically come to City Hall.



The expedited review process works exceptionally well for reviews that can be completed in an hour or two, but does not need to be limited to only simple reviews. Even more complex and lengthy review processes can be accomplished through this method; the difference is that the applicant will not get the results of review until the next day or the day after. The difference of this processing method is to utilize a scheduling system rather than a warehousing system, and to start the review immediately. Based on review times of different product types gathered from interviews with staff, the vast majority of projects reviewed by Troy could be processed through this method.

**44. Recommendation: Change the processing design to incorporate an integrated expedited processing system described above.**

### **Recommendation Regarding Maintaining Constant Staffing**

Troy has experienced staffing shortages from time to time because of injuries or illnesses incurred by staff. A constant level of service is not possible without sufficient staffing. To ensure a constant level of staffing Troy should assemble a list of contractual staffing resources that can be utilized on an as need basis. In the State of Michigan, individuals that perform plan review or inspections need to be registered and licensed individuals, which does create a challenge in assembling a list of staffing resources, but nevertheless is doable. If a joint effort were launched with other jurisdictions to assemble a list of available qualified staffing resource that could be collectively used on a part-time basis, we believe such a list could be assembled. Additional available staff could be individuals already employed by other jurisdictions, or could be individuals that meet the minimum hiring qualifications that could be collectively paid by multiple jurisdictions to maintain the continuing educational units required to maintain current State licensing and registration. Additional staffing resources should be sought to cover other technical functions performed by the development review services.

An additional option that needs to be looked at is to add a full-time intermediate staffing position that would perform all of the non-technical aspects related to the review process. Currently, the Building Inspection Department has such a position but because of clerical shortages in general, this position is not allowed to function full time in plan review support. Either another clerical staff position should be added to allow this position to be allocated full time to plan review or part-time staffing should be brought in on an as-need basis to allow this to happen. The concept of having a reserve list of qualified staff that can be called on should be utilized for clerical staffing as well. The City should maintain a standing eligibility list of full-time and part-time qualified clerical staff that can be called in as needed to help when prolonged absenteeism occurs or when increased workloads occur.

**45. Recommendation:** Assemble a contractual budget and a list of outside staffing resources that can be used to augment staffing shortages and utilizes these resources to maintain service levels.

**46. Recommendation:** Dedicate a full-time staff position to the plan review process to help facilitate non technical processing functions and schedule appointments for an expedited plan review process.

### **Recommended Change on Plan Review Data Tracking**

To design a highly efficient integrated expedited review process as described above, projects must be identified in terms of review complexity. Review complexity is based on how many different types of reviews will be required and how long in general each review process will take. Once project complexity parameters have been defined, processing lines can be designed to process the product types through a scheduled processing system without warehousing or handoffs. The processing design parameters require staffing needs to be matched to activity volumes based on project complexity.

In order to move the organization toward this highly efficient processing model it is important to identify product types with meaningful discernment so that review efforts can be quantified to establish proper staffing levels and to facilitate proper scheduling of project reviews. Currently, the only plan review tracking being done by the Building and Inspection Department is through an Excel spreadsheet where free form project descriptions are being entered and only building reviews are being tracked. In order to progress to a more efficient method of processing all review disciplines need to be tracked and projects categories need to be predefined and selected from pick lists to ensure consistency. The following are suggestions of what might be appropriate project categories to be tracking and in many cases are designation the City is already using.

- Track reviews by discipline of review:
  - ✓ Building Architectural
  - ✓ Building Structural
  - ✓ Plumbing
  - ✓ Mechanical
  - ✓ Electrical
  - ✓ Fire

- ✓ Engineering
- ✓ Water
- ✓ Landscape
- ✓ Planning
- Track the reviews required within each discipline by use category.
- Within each discipline track by major project category that provides significant differentiation, such as:
  - ✓ Residential Single Family
  - ✓ Residential Multifamily
  - ✓ Residential Multifamily High Rise
  - ✓ Commercial Industrial 1& 2 Story
  - ✓ Commercial Industrial Mid-rise 3/6 Story
  - ✓ Commercial Industrial High Rise
- Within each major project category track by scope of work:
  - ✓ New construction projects
    - Foundation Only
    - Shell Only
    - Garage Only
    - Finish Interior
    - Complete Building
  - ✓ Existing remodels/alterations
    - Alterations
    - Additions
    - Minor alterations
    - Minor additions
    - Repairs
  - ✓ Site Work
  - ✓ Demolition

**47. Recommendation: Deploy the plan review module of Equalizer and track the elements listed above.**

**Recommendation for Plan Review Automation**

As recommended earlier in this report, Troy should deploy the plan tracking module available from Equalizer and fully automate the plan review process. The submittal processes, transaction dates, actual review processing times, current status of each review, and all review comments should be contained in the automated system. If plans are submitted electronically or scanned into electronic files they should be attached to the plan review file and transmitted electronically to each reviewer. Once review comments have been completed by each reviewer, word merge functionality should be deployed that automatically assembles every reviewers comments into a consolidated correction notice that can be emailed to the applicant. If automation is fully deployed it will result in greater efficiency in productivity and higher customer satisfaction.

**Plan Review Performance Standards**

Because business today has national and international exposure, it is important that established performance standards to complete plan review and inspections be in line with the established standards expected by industry. It has been our observation that the industry desires plan review completion targets of same day service for simple projects and no more than 10 to 15 day review targets for more complex projects in order to maintain competitive and predictable costs.

Even if the processing system delineated in the expedited processing alternative is deployed, the larger more complex projects will still need to be accomplished through an intake processing method. If outside contractual plan review services are utilized for these more complex projects, the processing timelines for review completion still need to be established. We believe the following are acceptable performance targets and are not too different from what Troy has already established. The establishment of targets needs to be more than goals; however, they need to be more of assurances where customer can count on them being met. This means timelines need to be monitored very closely, priorities in staff labor allocations need to be monitored, and outside resources should be solicited before timelines are exceeded.

**Table 15  
Recommended Plan Review Performance Targets**

	<b>1<sup>st</sup> Cycle</b>	<b>2<sup>nd</sup> Cycle</b>	<b>3<sup>rd</sup> Cycle</b>
New Commercial Construction	15 Days	10 days	5 days
Major Commercial alterations	10 days	5 Days	Same Day
New Multifamily Construction	10 days	5 Days	Same Day
All other reviews (2 hours or less)	Same Day	Same Day	Same Day

**48. Recommendation:** Adopt the above plan review performance standards and monitor workload to ensure time lines are met.

## **F. CONSTRUCTION INSPECTIONS**

### **Organizational Structure**

The construction inspection section is staffed by one Supervisor, two Building Inspectors, two Plumbing Inspectors, two Mechanical Inspectors, and two Electrical Inspectors. The Building and Inspection Department has created two inspection zones by splitting the City in half, with half the inspection staff assigned to the west side and half to the east side. The sub-trade inspectors do both inspections and plan reviews for the projects that are located in their assigned inspection area. Inspector hours are 8:00a.m. to 4:30p.m. with a 30 minute lunch break. Inspectors come to the office in the morning and remain in the office until 9:00a.m. During the morning office hour they determine their inspection routes, familiarize themselves with the inspection history of jobs, pull inspection records, wait on customers that request their help at the counter, and answer phone calls related to time of inspection, inspection problems or plan review issues. Inspections are performed between 9:00a.m. and approximately 3:30p.m. but can extend to almost 4:30p.m. if workload is heavy that day. Between 3:30p.m. and 4:30p.m. inspectors return to the office and re-file inspection records or do plan review. The ability to provide next day inspection is around 99% which is very admirable and every attempt to maintain this standard should be made.

### **Automation Improvements Recommended**

The Construction Inspectors currently have access to two computers for eight inspectors. Every inspector interviewed indicated this lack of computer access was creating efficiency problems in being able to access permit information. Because of not being able to get access to permit information, some inspectors will use other staff computers from 8:00a.m. to 9:00a.m. which impairs the fellow worker's ability to be productive during this time

The inspection staff should be provided with individual computers that are assigned to them. It is recommended that this PC be a rugged laptop that has wireless capability, thus allowing remote access to the permit database. If inspectors are lacking in computer skills, none interviewed indicated this to be the case, they should be trained to become proficient. The field operation should start migrating toward full automation deployment as described in the section entitled “Permit Application, Plan Submittal, Permit Issuance and Inspection Requests.

**49. *Recommendation:* Provide inspection staff with computers suitable for field deployment.**

**50. *Recommendation:* Provide training to staff that lack computer proficiency.**

**51. *Recommendation:* Start planning the transition process to fully automate the inspection process as described within this report.**

### **Inspection Counting**

A differentiation should be made between requested inspections and fill-in inspections, so that an accurate count of solicited workload can be monitored and measured. The national standard for inspection tracking is one inspection counted per trade inspected per individual building or if a project consists of multiple units such as condominium, apartments or suites in a commercial strip center, one inspection per unit. Fill-in inspection should be counted as spot inspections and not counted as part of the standard workload.

**52. *Recommendation:* Adopt the inspection count system as outlined above.**

### **Recommended Better Plan Review Allocation**

Priority is given to performing inspections, therefore if workload is heavy sub-trade plan reviews may wait weeks before being performed. Two inspectors stated that so much priority is placed on maintenance of an inspection count, around 14 inspections per day, that non-solicited inspections are expected to be performed on non-finaled projects. This emphasis on inspections over plan review has generated considerable backlogs in plan review processing

Allocation of time to perform plan reviews should be given priority over fill-in inspections. Workload should be monitored relative to how many plan reviews are waiting to be reviewed and if a backlog is being generated overtime should be utilized

to maintain established performance standards or outside resources should be solicited to perform the work. If an expedited plan review process is established as recommended, time must be allocated and scheduled for this function. If in-house staffing resources are not adequate to staff an expedited review process, outside contractual staffing should be utilized.

**53. Recommendation: Monitor sub-trade plan review workloads, and prioritize to meet review performance standards.**

**54. Recommendation: Establish added contractual staffing resources to augment internal inspection staffing shortages in order to maintain performance goals.**

### **Recommended Utilization of Re-inspection Fees**

In most jurisdictions that have fee structure that allow unlimited amounts of service to be rendered based on a set permit fee, a certain number of customers are abusive of the services being offered. Customers will request inspections without having completed the work or may call for many partial inspections, or may not make all the corrections previously requested or may not provide access, plans or documents to complete an inspection. These inefficiencies affect the overall performance capacity of service delivery, but are generally created by a minority of customers. What Troy has done to deal with this issue is require a re-inspection fee to be paid by abusive customers. This method can be perceived as punitive if not utilized consistently by all staff. The best application of this method is to program a fee in the automated system based on inspection results. If this methodology is deployed better consistency is obtained.

**55. Recommendation: The application of re-inspection fees should be programmed into the automated system.**

## **G. CODE ENFORCEMENT**

### **Organizational Structure**

The Code Enforcement Housing Inspection section is staffed by one supervisor, two fulltime Housing & Zoning Inspectors for Code Enforcement and two part-time Housing & Zoning Inspectors for Housing Inspections. The Housing and Zoning section oversees the installation of signs, perform all plan review, permit issuance and inspections. They also enforce zoning, noise, junk vehicles and litter regulations. This

section also provides housing inspections on rental property that have three or more individual dwelling units.

### **Code Enforcement Workflow**

The Code Enforcement section predominantly receives their workload from complaints. Most of the complaints are related to weeds and overgrown landscaping, abandoned cars, or excess litter on a site. Complaints are generally responded to in one to two days. The typical process is a drive by to verify if the complaint is valid. A written notice is mailed to the owner requesting them to abate the violation. It was estimated by staff that 85% to 90% of the time abatement occurs as a result of the first letter being sent. If the violation is not abated, a final notice is sent that stipulates the owner will be taken to court if abatement is not accomplished within a designated timeline; 14 days for autos, seven days for grass and litter. If abatement still does not occur a civil infraction is issued which requires a court appearance before a judge. It is estimated by staff that 95% of the complaints are abated before the actual court date. For the violations that are not abated before the court date, they generally never do get abated. The reason given by staff for this is that even though a \$500 fine can be assessed and can be repeatedly assessed, there is actually no repercussion for non-compliance or failure to pay the fine. Civil infractions are not enforced by the Police and therefore no mechanism exists to obtain enforcement. To go before a judge requires a City Attorney approval. To obtain a court date usually takes between five to six weeks. The time allocated by staff to attend court appearances could be three to four hours per week.

Because of the high compliance rate prior to the actual court appearance, the lack of teeth associated with a court ruling and the time consumed to get to court, staff is desirous of moving away from the Civil Infraction process. They would like the Civil Infraction process to be changed into a Responsibility Finding process. This would allow cases to be heard by a magistrate appointed by a judge. This process would reduce the delay in obtaining a hearing to two weeks and would require less staff time to bring a case to hearing because attorneys are not required in this process. We believe the arguments presented by staff are reasonable and based on sound judgment and should be actively considered.

**56. *Recommendation:* Consider changing the Civil Infraction process to a Responsibility Finding process as desired by staff.**

### **Process Change**

The supervisor of the section is desirous of changing the approach in delivering the first warning notice. Currently, as stated above, a drive-by to confirm a violation exists occurs and then a warning letter is mailed to the owner. He would like to



change the initial noticing to a personal contact, i.e. face-to-face contact with the owner. Changing to this method of enforcement would be more personal and would undoubtedly provide citizens that are being asked to abate a nuisance with a more positive view of the City. It would also require more staff to maintain a timely response to complaints because of the added time needed to make contact and discuss the nuisance. It was estimated by staff that there is about a 40% repeat of violations however, and perhaps a more personal approach would diminish the rate of repeat offenses.

The first step in making a determination if a procedural change is warranted should be to start analyzing data. Currently, all of the complaints are entered into Equalizer and therefore reports should be generated for how many complaints are being generated, what types of violations, and location. Determine empirically the percentages of complaints that are being resolved after the initial notice, how many after the second notice, how many before going to court and how many are repeat offenses. If the actual percentages are close to what staff believe based on gut assessments, launch a pilot program in an area where repeat offenders are high and see if the percentages of repeat offenses decline. If they do decline, then City management needs to determine if they want to allocate enough resources to make this approach the norm.

**57. *Recommendation:* Create the necessary reports that will provide the statistical data necessary to assess the validity of changing direction.**

Another approach that might be considered for areas where the greatest concentration of violations is occurring is to conduct citizen educational meetings to promote more neighborhood interaction. When a workload is complaint driven, the objective obviously is to eliminate the complaints. One method of doing so is to encourage citizens to independently resolve issues among themselves without getting the City staff involved. Educating citizens about the regulations and enforcement process and the incurred costs associated might encourage them to act on their own.

**58. *Recommendation:* Citizen education meetings should be held in neighborhoods receiving the most complaints.**

## **Housing Inspections**

The housing inspection program was enacted pursuant to the Housing Law of Michigan. The law stipulates that multifamily dwellings or rooming houses which contain apartments or units which are offered for rent for more than six months a year are required to register within the City. In addition to being registered each dwelling must have a Certificate of Compliance. The initial Certificate of Compliance is accomplished by granting a certificate of occupancy upon completion of original

construction. Follow up inspection are stipulated by the Michigan Housing Law to occur every two years unless no violations were observed during the last inspection and then the term can be extended to three years. Inspections can be conducted based on the three listed criteria below, which are left to the judgment of each jurisdiction;

1. An area basis, where all premises within a geographical area are inspected.
2. On a complaint basis.
3. On a recurrent violation basis.

In the past, due to a lack of staffing available to conduct housing inspections on a routine basis, the Building and Inspection Department was only responding to complaints. Since adding the two part time positions the Department has now started performing proactive inspections on an area basis. The current age range of Certificates of Compliance is estimated to be between six to 10 years old, excluding units that have recently been inspected. With the staff being added recently it appears the time period between inspections should be able to be lowered to close to a two year frequency for units where violations were observed and three years for units where no problems were found.

**Table 16  
Housing Inspection Time Estimate**

<b>Units</b>	<b>Time to Inspect per Unit</b>	<b>Total Inspection Time Needed</b>
<b>6234</b>	<b>25</b>	<b>2597.5</b>
<b>Buildings</b>		
<b>891</b>	<b>30</b>	<b>445</b>
<b>Total</b>		<b>3043</b>
<b>Yearly Hours needed if done every 2 years</b>		<b>1521</b>
<b>Staffing Needed based on available time listed in table below</b>		<b>2.2</b>

**Table 17  
Housing Inspector Productive Assessment**

<b>Annual Paid Hours</b>	<b>1040</b>
<b>Holidays</b>	<b>32</b>
<b>Personal</b>	<b>15</b>
<b>Vacation</b>	<b>60</b>
<b>Sick</b>	<b>20</b>
<b>Net Time on Job</b>	<b>913</b>
<b>Daily Production Hrs</b>	<b>3</b>
<b>Daily Productive %</b>	<b>0.75</b>
<b>Annual Productive Hours</b>	<b>685</b>

## **H. APPEAL BOARDS**

The Building Inspection Department administers applications for the Board of Zoning Appeals. A Building Permit application is required to be filed and a denial determination made prior to being allowed to file for a zoning appeal. Building also administers the Building Code of Appeals Board. This board meets once a month and hears and rules on variance appeals. Most variance appeals are related to signs, fences and basement ceiling heights when basement storage spaces with low ceiling heights are being converted to habitable spaces.

## **I. FIRE PREVENTION**

### **Organizational Structure**

This section is supervised by an Assistant Fire Chief, has seven fire inspectors assigned and one clerical position. This section is responsible for all fire life safety plan reviews and inspections that include architectural life safety concerns, (site access and exiting), life safety system permits (automatic fire suppression systems, and alarms), Hazmat material storage and use, and the issuance of major events permits. The Fire Prevention section also conducts annual inspections for restaurants and assembly occupancies.

## **Authority**

The Fire Prevention section is a division within the Fire Department that reports directly to the City Manager's office. The Fire Department has the following Codes, as amended by the State of Michigan:

- 2003 International Building Code (IBC)
- 2003 International Fire Code (IFC)

## **Departmental Processing Interaction**

This section works closely with the Planning Department during the preliminary review process providing guidance on fire related issues and during the final site plan approval process which requires their sign off prior to approval being granted by planning. They also work closely with the Building and Inspection Department during construction plan review and inspections. All plans are submitted to Building and a set is routed to the Fire Prevention section for their review. All construction related plan reviews are jointly reviewed by both Building and Fire. This includes architectural reviews which are looked at by both the Building Plans Examiner/Coordinator and Fire, sprinkler plans that are jointly reviewed by a Mechanical Inspector and Fire, and alarm plans that are reviewed by an Electrical Inspector and Fire. All fire construction permits are issued through building once Fire has granted plan review approval. All fire construction inspections are received in Building where Fire will manually extract the Fire inspections from the daily inspection log that was created by Building. In the inspection process, as in the plan review process, both Fire and Building staff will inspect the same installations (architectural life safety issues, sprinklers and alarms) but from slightly different perspectives. For example, alarm installations are reviewed by Electrical Inspectors for proper electrical installation and Fire will review functionality, (placement and audibility). The reason for this overlap in plan review and inspections has been attributed to State law. State law requires a licensed Mechanical Inspector to review sprinkler systems, a licensed Electrical Inspector to review alarm systems and both systems are required to be reviewed by a Fire Inspector. Fire must complete and approve their inspection process prior to building granting a certificate of occupancy or a final inspection.

As stipulated in the Expedited Process Alternative section, we believe redundant processing should be eliminated if at all possible. In other municipalities we have reviewed, system permit installations are plan reviewed and inspected exclusively by the Fire Department. The elimination of this redundant processing appears to be more difficult in the State of Michigan because of the State laws, but is not impossible. One approach is for Fire to hire staff in the future when vacancies occur that meet the State requirements, thus allowing these review processes to be consolidated under a single control.

- 59. Recommendation:** Consider changing job specification to promote the hiring of personnel in Fire Prevention that meet the State licensing requirement for Electrical and Mechanical Inspectors.

### **Automation**

The Fire Prevention section has successfully deployed automation within their section. Every inspector has a City supplied computer and a cell phone. Fire utilizes a “Fire Records Management System's Occupancies Module” (FRMOM) for tracking non-construction related inspection activities, as well as utilizing Equalizer to track construction inspection activities. The FRMOM system is a County-Wide emergency response system utilized by all Fire Departments in Michigan and therefore can not be replaced by a permit tracking system. Fire does have some unique data needs that reside within the FRMOM system that need to be fully integrated with the Equalizer system thus necessitating an interface to be developed where data can be shared between these two systems. Fire is ready and eagerly willing to start using the plan review module in Equalizer once deployed by Building. The automation improvements stipulated for Building are also applicable for Fire and complete integration of all development review departments within Equalizer needs to be accomplished.

- 60. Recommendation:** Integrate Fire needs stipulated above in any future deployment of automation.



## VI. ENGINEERING DEPARTMENT

### A. POSITIVE FINDINGS

- The Engineering Focus Group spoke very favorably about their experiences working with the Engineering Department.
- After a six year audit of the City's implementation of the State and Federal stormwater management regulations, the Engineering Department received valuable certification for its programs and efforts.
- The City Engineer has empowered his staff in making decisions and working with applicants to resolve engineering related issues.
- Engineering design review responsibilities are shared among the staff engineers, allowing them opportunities to work on other projects.
- Checklists are utilized to assist both customers with submittal requirements and staff with technical reviews.
- The Engineering Development Standards are available and identifiable on the website.

### B. PROFILE

#### Authority

The Engineering Department operates under the following authority:

- Troy City Charter
- Troy City Code
- Environmental Protection Agency Stormwater Regulations as implemented by the State Department of Environmental Quality

#### Organization

The table below indicates specific positions and responsibilities for the Engineering Department:

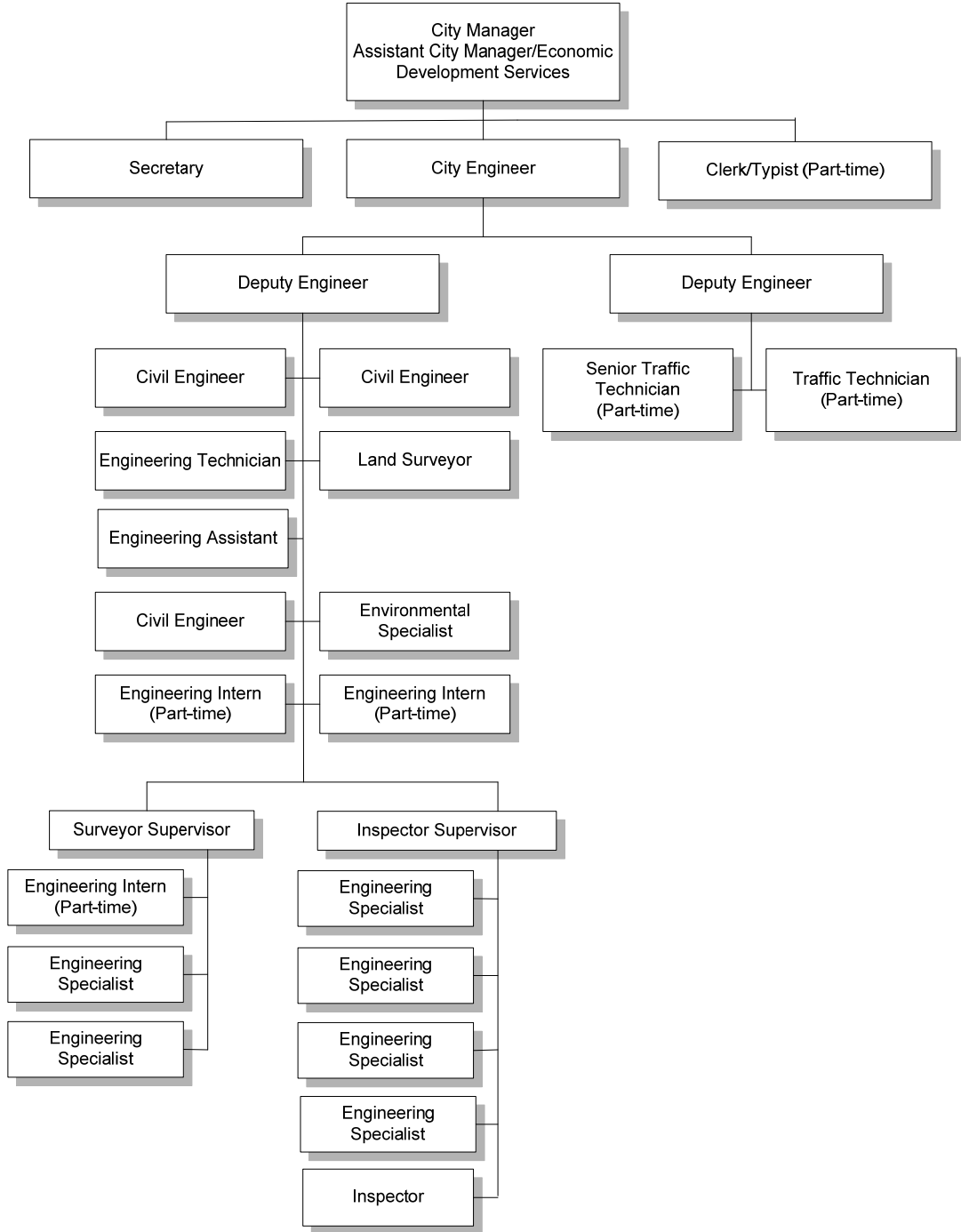
**Table 18  
Staff Functions – Engineering Department**

<b>Position</b>	<b>No. of Positions</b>	<b>Responsibilities</b>
City Engineer	1	Manages the functions of the Engineering Department. Reports to Assistant City Manager for Economic Development Services.
Deputy City Engineer	2	One manages the capital project and plan review engineering functions and one is the City's Traffic Engineer and conducts all plan reviews for traffic impacts. Both are involved in the design of City initiated Capital Improvement Projects. Both report to the City Engineer.
Civil Engineer	3 (1 vacant)	Conduct preliminary and final site plan reviews and design/manage Capital Improvement Projects. Report to Deputy City Engineer.
Engineering Technician	1	Plan intake and routing. Processes bonds and deposits. Preliminary reviews for completeness. Reports to Deputy City Engineer.
Engineering Intern	3 (part time)	One conducts minor plan review and Capital Improvement Project support functions, one supports the Environmental Specialist with stormwater related reviews, and one assists with survey functions. One reports to Civil Engineers, one reports to Environmental Specialist, and one reports to Surveyor Supervisor.
Inspector Supervisor	1	Management oversight of construction inspection activities. Supervises and monitors schedules of Construction Inspectors. Reports to Deputy City Engineer.
Inspector	1	Oversees scheduling and completion of inspections of streets, traffic improvements, sidewalks. Reports to Inspector Supervisor.
Engineering Specialist	6	Three complete of inspections of streets, traffic improvements, sidewalks. One issues encroachment/right-of-way permits and inspects utility work in public rights-of-way. Two assist with public rights-of-way surveys. Four report to Inspector Supervisor, two report to Surveyor Supervisor.
GIS Analyst	1	Builds and maintains public facilities portions of GIS system. Assists with special projects as needed. Position budgeted in Engineering Department but reports to GIS Administrator
Engineering Assistant	1	Collects data for GIS system, builds links on GIS system for facility attributes. Reports to Deputy City Engineer.
Environmental Specialist	1	Oversees projects to improve watersheds and stormwater drainage system. Conducts plan review for evaluation of stormwater drainage system. Monitors Federal, State, and County information regarding changes in stormwater drainage regulations. Liaisons with other stormwater agencies. Reports to Deputy City Engineer.
Land Surveyor	1	Oversees surveys for design and construction of public improvements. Reports to Deputy City Engineer.
Surveyor Supervisor	1	Oversees surveying functions and projects. Reports to Land Surveyor.
Senior Traffic Technician	1 (part time)	Assist Deputy City Engineer/Traffic Engineer with plan review. Reports to Deputy City Engineer/Traffic Engineer.
Traffic Technician	1 (part time)	Assist Deputy City Engineer/Traffic Engineer with plan review functions. Reports to Deputy City Engineer/Traffic Engineer.
Secretary	1	Administrative support, plan intake, processing and routing. Reports to City Engineer.
Clerk Typist	1 (part time)	Administrative support, plan intake and routing. Reports to City Engineer.



The figure below illustrates the organization of the Engineering Department.

**Figure 7**  
**Engineering Department Organization**



## Activity

The Engineering Department's development related responsibilities are as follows:

- Reviews development related public improvement plans for compliance with City standards and specifications.
- Reviews development related site grading, drainage, and soil erosion control plans for compliance with City, County, and State requirements.
- Maintains City development standards, construction specifications, and standard construction details, including standards for new development.
- Investigates construction-related concerns from the public regarding construction and development projects.
- Issues permits and performs inspections for soil erosion control, culvert and right-of-way permits.
- Inspects public improvements for compliance with development standards, construction specifications and soil erosion control requirements.
- Liaisons with utility companies for private utility construction in City rights-of-way.
- Reviews plans of new developments for compliance with traffic standards.
- Conducts site plan/traffic control plan reviews.

The Engineering Department conducts plan reviews for all preliminary and final plan submittals.

The table below identifies the average number of plan reviews conducted by the Engineering Department annually.

**Table 19**  
**Engineering Department Preliminary and Final Site Plan Reviews**

<b>Application Type</b>	<b>Average Number of Applications Processed Annually</b>
Preliminary Site Plan and Site Condominium Preliminary Plan	26
Final Site Plan and Site Condominium Final Plan	26

The Engineering Department also conducts construction inspections for public improvements constructed as a part of development projects, including streets, traffic, streetlights, sewers, storm drain facilities, and sidewalks. Unfortunately, there is no efficient way to calculate the actual number of inspections completed annually because the Engineering Department does not monitor this activity electronically or in any manner that could lend the information to being readily retrievable.

- 61. *Recommendation:* An electronic permit tracking system should be implemented for the monitoring of both plan reviews and inspections. The system should include information as to all inspections related to a construction permit.**
  
- 62. *Recommendation:* Weekly management reports should be generated from the system and reviewed by the City Engineer or one of the Deputy City Engineers to monitor inspection status and/or completion.**

## C. PROCESS ISSUES

### Engineering Site Plan Reviews

The Engineering Department conducts technical reviews for Preliminary and Final Site Plan submittals (including Site Condominium Site Plans). According to the information provided, Engineering Department staff completes Preliminary Site Plan reviews within five working days of their receipt. The site plans are reviewed by a Civil Engineer (for public improvements), the Environmental Specialist (for storm drainage related issues), and the Traffic Engineer. At this stage, because the plans are so general in nature, each of these specialty functions can complete their reviews in no more than two hours.

- 63. *Recommendation:* Preliminary Site Plan reviews (including Site Condominium Site Plan Preliminary Plan reviews) and should be completed within five working days and written comments provided to the Planning Department staff within that timeframe.**

Final Plan Reviews (including Site Condominium Final Site Plan reviews), which are much more technically involved and complicated, are anecdotally currently taking anywhere from two to eight weeks, depending upon the complexity and size of the project. Again, due to the absence of any formal tracking system, the actual time can not be accurately evaluated. Regardless, we feel that eight weeks, which equates to 40 working days, is entirely too long of a turnaround time.

**64. Recommendation:** Review turnaround times for Final Plans should be established at 30 calendar days for first reviews, 15 calendar days for second reviews, and 7 calendar days for third reviews.

**65. Recommendation:** The above timelines should be successfully met 95% of the time.

These proposed review times reflect that the first review should take the most time because it is comprehensive in nature. Subsequent reviews should be more focused on specific issues and therefore less time is needed and not all reviewing parties need to be involved. These timeframes should be actively monitored for each project.

During our first visit to Troy, we identified a problem with the routing of plans that are submitted for review that we believe has since been rectified. Previously, plans were routed directly to the City Engineer who would review the submittal and subsequently route the plans to Engineering staff for review. This initial routing would typically be completed in two working days, except for the occasional instance in which the City Engineer was not available or was out of the office for an extended period of time (more than three days). When this issue was raised with the City Engineer he immediately took action to establish a procedure for plan routing in his absence. It is our understanding that under the direction of the City Engineer, plans submitted to the Engineering Department for review during his absence will automatically be routed to either of the Deputy City Engineers who will route them for technical review within two working days.

**66. Recommendation:** Plans submitted to the Engineering Department should be routed immediately to the City Engineer who should distribute them for technical review within two working days of their receipt.

**67. Recommendation:** In the Director's absence, plans should be routed to one of the Deputy City Engineers who in turn shall distribute the plans for technical review within two working days of their receipt.

The Engineering Focus Group raised an issue with a lack of consistency in assigned reviewers for individual projects requiring multiple reviews. The City Engineer agreed that in the past because of staffing issues there were instances where it was impractical or not feasible to keep one engineer assigned to each project requiring plan review. However, these staffing issues have been resolved and it is the policy of the Engineering Department that whenever possible the same Civil Engineer will be assigned to conduct all reviewers related to an individual project.

## **Drainage/Soil Erosion Issues**

The participants in the Engineering Focus Group were very pleased with the performance and responsiveness of the Engineering Department staff. However, the issue of soil erosion control measure enforcement was raised as an area of concern. According to the participants, and as confirmed by staff, the City has been aggressively enforcing compliance with the approved storm water runoff controls included as specific project requirements. This aggressive enforcement has been seen by the development community as inflexible, overly demanding, and generally uncompromising in nature. Apparently, the aggressive and rigid management of the required stormwater run off control measures was directly attributable to an ongoing six year audit of the City's stormwater pollution prevention practices by the State Department of Environmental Quality. This audit was successfully concluded in September 2007 and resulted in the City of Troy receiving "certification" by DEQ, thus allowing the City to continue to manage its own stormwater pollution prevention program rather than ceding authority for this program to the County. State law precludes DEQ from performing another audit for a minimum of five years. According to the Engineering Department, with the certification that has been granted, staff will have the authority and license to work with developers to ensure compliance with City, State, and County stormwater pollution prevention requirements, rather than the immediate issuance of citations with the threat of work shutdown.

## **Bonds and Deposits**

The Engineering Department requires the submittal of bonds and/or cash deposits as security for completion of work to the development standards established by the City in the public rights-of-way. These securities are to be released upon the successful completion of the work as indicated by the Engineering Specialist (inspector) following an inspection of the work. Ultimately, all securities and deposits should be released at such time as the Certificate of Occupancy (C of O) is issued for the project. Staff will release a proportionate amount of the security as work is completed in phases.

In order to accommodate the development community, the City allows the issuance of Temporary C of O's so long as there are no life safety concerns. This allows the developer to occupy the structure while final work is being completed on the site or in the public rights-of-way. The City Code specifies that Temporary C of O's shall expire after six months. Unfortunately, there has been no enforcement of the six month expiration. This has led to lax enforcement of successful completion of all of the project requirements necessary for the final C of O to be issued. As many as fourteen signatures are required for sign off of the final C of O (including the Planning, Engineering, Parks and Recreation, Public Works, Real Estate and Development, and Building Departments) which can be overwhelming and onerous to

the developer who is already occupying and using the structure. Bond securities expire and the 10% cash deposit that is now required for public improvements does not seem to motivate developers, either. As a result, the City has occupied buildings for which final C of O's have not been issued and have technically expired Temporary C of O's. Further, the City has unclaimed cash deposits equaling over a million dollars.

We encourage and recommend that the City implement an electronic tracking system that will allow for efficient management of projects from beginning (the submittal of a land use entitlement application) to end (receipt of a Final Certificate of Occupancy). With the implementation of an electronic tracking system, final inspections will be an integral part of file, and project completion and tracking, along with the management of Temporary and Final C of O's, will be much more efficient.

**68. Recommendation:** An electronic permit tracking system should be implemented for the monitoring of development progress and to ensure that public improvements are completed as required for Final C of O issuance and release of all bonds and deposits.

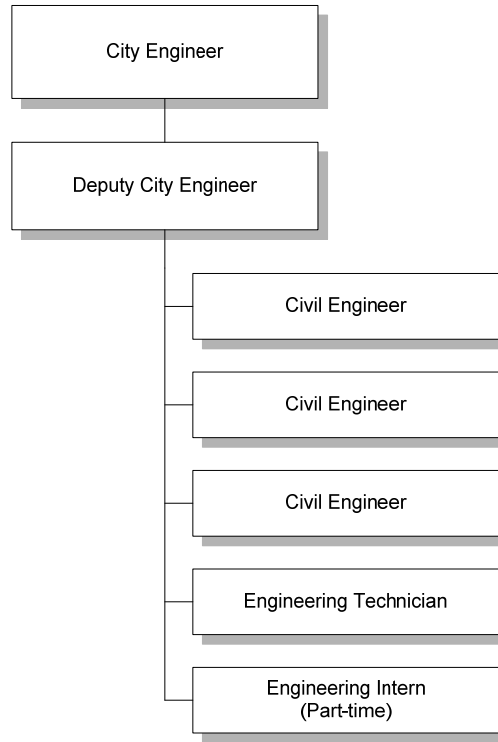
## **D. ORGANIZATIONAL ISSUES**

### **Staffing Analysis**

#### **Engineering Plan Review**

The Engineering Department's primary function related to development processing is plan review. The figure below illustrates the current structure of the engineering plan review staffing.

**Figure 8  
Engineering Plan Review Staffing Organization**



The table below illustrates the average Civil Engineer staff time required for plan reviews:

**Table 20  
Engineering Department Average Review Time**

<b>Type of Review</b>	<b>First Review Processing Time (Hours)</b>	<b>Second Review Processing Time (Hours)</b>	<b>Third Review Processing Time (Hours)</b>
Preliminary Site Plan Reviews (including Site Condominium Preliminary Plans)	2	1	N/A
Final Site Plan Reviews (including Site Condominium Final Plans)	16	8	4

The hours required based upon the approximate number of hours it takes a Civil Engineer to complete a plan review is outlined on the table below:

**Table 21  
Engineering Plan Review Required Hours Analysis**

<b>Application Type</b>	<b>Average Number of Applications Processed Annually</b>	<b>First Review</b>	<b>Second Review</b>	<b>Third Review</b>	<b>Total Number of Hours Required Annually</b>
Preliminary Site Plan and Site Condominium Preliminary Plan	26	3	1.5	N/A	117
Final Site Plan and Site Condominium Final Plan	26	20	10	5	910
				Total Hours Required	1027

In order to complete the staffing analysis, we used the annual productive hours of 1421 available hours for each full time Civil Engineer position. According to the information we were provided, there are two Civil Engineers are currently assigned to plan review and a third vacant position to be filled. Each spends as much as 50% of their time on Capital Projects.



**Table 22  
Engineering Department Available Hours for Plan Reviews**

<b>Engineering Staff</b>	<b>Total No. Available Hours</b>	<b>Capital Projects (50% for Civil Engineers)</b>	<b>Other Job Related Assignments (general inquiries, Special Projects, etc., 20%)</b>	<b>Time Remaining for Plan Reviews</b>
Civil Engineers (3)	4263	(2132)	(853)	1278

The total Preliminary and Final Site Plan engineering review demand is 1027 hours annually. The total available hours as illustrated above is 1278. We were not able to accurately calculate the amount of time that the Engineering Department dedicates to PUD plan review, but suffice it to say that there is some time required of the engineers for this responsibility, as well.

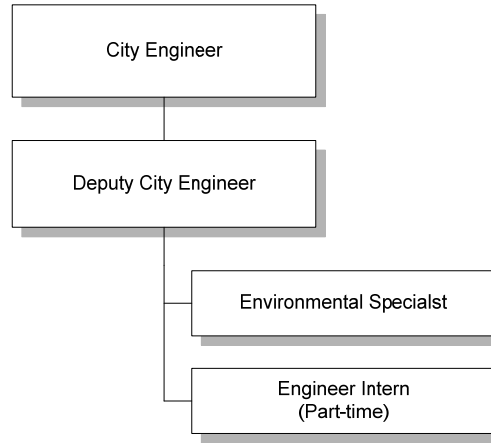
We recognize that workload demand can fluctuate quite a bit for the Civil Engineers depending upon construction cycles and planned capital improvement project schedules. It is our understanding that the City maintains contractual relationships with consultant engineering firms qualified to supplement staffing in times of increased demand. We support this arrangement and encourage the City to continue this practice in order to support our recommended turnaround times and 95% achievement rate.

Given that the above calculation does not illustrate that the Civil Engineers are operating at capacity strictly accounting for the site plan reviews, combined with the use of consultants on retainer to assist when workload demands necessitate their assistance, the Engineering Department appears to be adequately staffed for this function.

**Environmental Specialist Plan Review**

The Environmental Specialist is involved in the plan review process, as well. The Environmental Specialist reviews site plans for wetlands and floodplains impact, stormwater discharge, and stormwater related landscape reviews. The figure below illustrates the staffing within the Engineering Department for environmental programs.

**Figure 9  
Environmental Section Staffing Organization**



The table below outlines the time required for these plan reviews.

**Table 23  
Environmental Specialist - Average Review Time**

<b>Type of Review</b>	<b>Processing Time (Hours)</b>
Preliminary Site Plan Reviews (including Site Condominium Preliminary Plans)	2
Final Site Plan Reviews (including Site Condominium Final Plans)	6

The hours required based upon the approximate number of hours it takes the Environmental Specialist to complete a plan review is outlined on the table below:

**Table 24  
Environmental Specialist – Plan Review Hours Analysis**

<b>Application Type</b>	<b>Average Number of Applications Processed Annually</b>	<b>Hours Required for Plan Review</b>	<b>Total Number of Hours Required Annually</b>
Preliminary Site Plan and Site Condominium Preliminary Plan	26	2	52
Final Site Plan and Site Condominium Final Plan	26	6	156
			208

**Table 25  
Environmental Specialist - Available Hours for Plan Reviews**

<b>Staff</b>	<b>Total No. Available Hours</b>	<b>Capital Projects (15%)</b>	<b>Stormwater Permitting/Soil Erosion Programs (55%)</b>	<b>Stormwater/ Drainage Complaint Investigation (15%)</b>	<b>Time Remaining for Plan Reviews</b>
Environmental Specialist	1421	(213)	(782)	(213)	213

This analysis illustrates that the Environmental Specialist is basically operating at capacity. We were informed that at one time the workload related to compliance with stormwater regulations was a shared responsibility with a staff member in the Public Works Department. The position in the Public Works Department has since been eliminated and the Environmental Specialist has by default accepted 100% responsibility for monitoring of the regulations and requirements and maintaining relationships with the appropriate regulatory agencies. Given the day-to-day

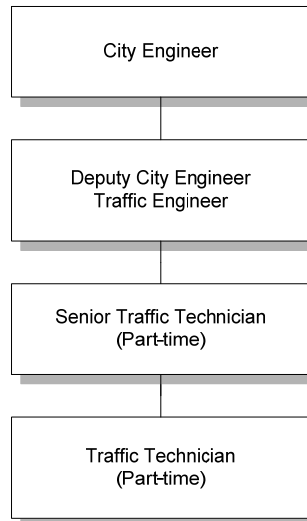
operational requirements and the fact that the Environmental Specialist is basically functioning at capacity, we would recommend that the City investigate opportunities with the Public Works Department to relieve some of the non-plan review and non-project related responsibilities of the Environmental Specialist, such as serving as liaison to other stormwater agencies and attending offsite meetings.

**69. Recommendation: Explore opportunities with the Public Works Department to share some of the non-project and non-plan review stormwater program responsibilities.**

### Traffic Engineering Review

The Traffic Engineering section of the Engineering Department is responsible for reviewing new developments for compliance with the City’s traffic standards and performs site plan/traffic control plan reviews. The figure below illustrates the organizational structure of the Traffic Engineering staff.

**Figure 10  
Traffic Engineering Organizational Structure**



In addition to the activities outlined in the above paragraph, the Traffic Engineering staff is responsible for the following activities:

- Analyzing roads for defects and deficiencies
- Maintaining records of traffic crashes, signals, and signage
- Conducting and maintaining traffic volume counts
- Responding to requests for new traffic signals and signs

- Acting as liaison with the Road Commission for Oakland County on traffic signal complains
- Investigating traffic vision obstructions
- Identifying traffic safety concerns and developing projects
- Preparing applications for State and Federal funding

The Traffic Engineering section maintains contractual relationships with qualified consulting firms for assistance with site plan reviews and analysis of traffic impact studies. Not every site plan or development proposal is required to complete a traffic impact study. No information was available as to the actual number of site/development plans that had traffic impact studies completed as a requirement.

According to the Deputy City Engineer/Traffic Engineer, Preliminary Site Plan reviews are completed in less than one week from the date of their receipt. This timeline successfully supports the recommendation contained in this report that comments be returned to the Planning Department within five working days.

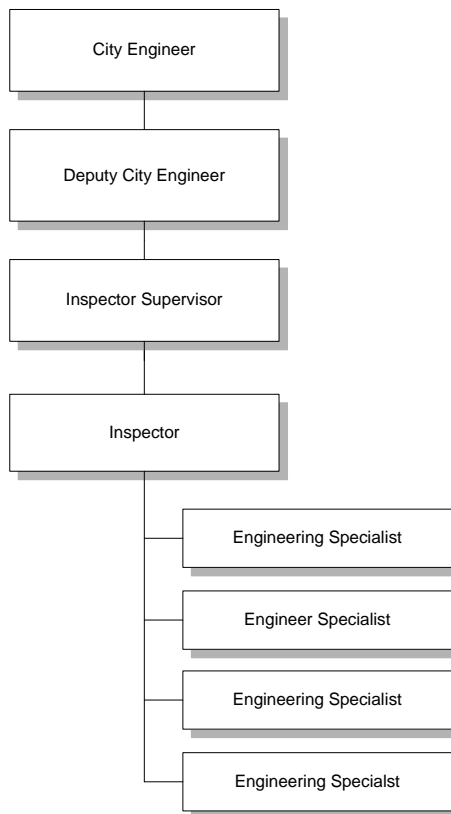
Final Site Plan reviews that require traffic studies can take anywhere from 3 hours to 16 hours per review. There is no data available as to the turnaround time for these reviews. The recommended turnaround times for final site plan reviews should be built into the contractual relationships with the consulting firms assisting with these reviews.

**70. *Recommendation:* The recommended Final Site Plan turnaround times should be included in the consultant contracts scope of services.**

### **Public Improvement Inspections**

The inspection staff conducts inspections of public improvements that are constructed as a requirement for a private development projects. This responsibility is in addition to the inspection of City road, water and sewer projects. The figure below illustrates the staffing structure of the Inspections section.

**Figure 11**  
**Inspection Staffing Organization**



There are four Engineering Specialists (inspectors); three who conduct inspections and one who is responsible solely for the issuance and inspection for utility right-of-way permits. The Engineering Department retains one to four inspectors under contract to supplement the staffing in times of increased workload. There was no data available as to the number of inspections conducted by the in-house staff and/or the outside contracted inspectors. However, we were informed that inspections are conducted within one work day of the receipt of the request. This practice should be continued.

## VII. PLANNING DEPARTMENT

### A. POSITIVE FINDINGS

- The Director of the Department is very interested in incorporating the use of technology to improve efficiency in the processing of applications.
- Planning applications are processed within the timeframes specified within the Zoning Ordinance.
- The staff sees the Director as supportive in that he not only allows but encourages flexibility in helping applicants, property owners, and other customers.
- The Department is seen as helpful and accessible by the customers who participated in the focus groups.
- The Planning Department successfully integrates the future (often called “Advanced”) planning functions with the day-to-day application processing (often called “Current”) planning functions without any division of responsibilities among its existing staff.
- The various application packets are well prepared and provide clear direction with the use of checklists to applicants as to what documents must be provided at the time of submittal. The application packets include copies of the pertinent code sections.

### B. PROFILE

#### Organization

The Planning Department is responsible for the administration and implementation of the Future Land Use Plan and the Zoning Ordinance. The Department serves as the staff support to the City Council and Planning Commission and assists these bodies with the decision making process regarding land use policies and development proposals.

The Department processes applications for new development and redevelopment within the City, such as Site Plan reviews, Special Use requests, Planned Unit Development (PUD) proposals, Subdivision and Site Condominium proposals, and Rezoning requests. The Department reviews development plans to insure compliance with City Ordinances and assists citizens and developers in better understanding the land use policies and regulations of the City.

Specifically, in addition to the development and implementation of the Future Land Use Plan and the Zoning Ordinance, the Planning Department is responsible for the following:

- Site Plan Reviews
- Special Use Requests
- Subdivision Reviews
- Site Condominium Reviews
- Rezoning Requests
- Planned Unit Developments
- Zoning Ordinance Text Amendments
- Street Vacation Requests
- Zoning Verification Letters
- Site Plan Compliance Inspections
- Planned Unit Development (PUD) Plans

Table 26 indicates specific positions and responsibilities for the Planning Department:

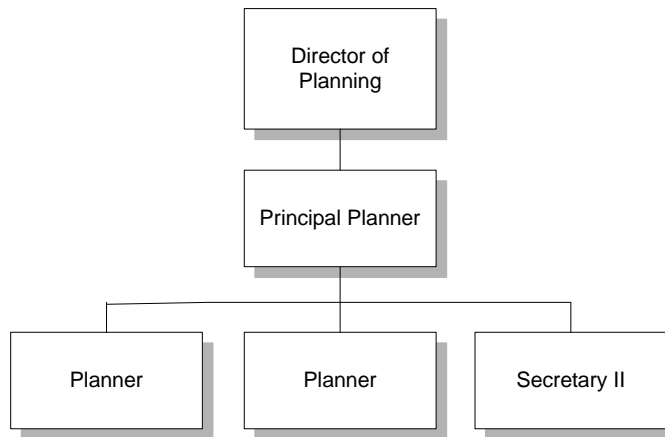
**Table 26  
Planning Department Positions and Responsibilities**

Position	No. of Positions	Responsibilities
Planning Director	1	Provides daily management of the Planning Department. Reports to the Assistant City Manager, Economic Development Services
Principal Planner	1	Prepares and presents reports for Planning Commission and City Council consideration. Monitors application processing. Reports to the Planning Director
Planner	2	Processes land use applications. Answer inquiries via telephone and at the public counter. Prepare public notices for mailing and signs for posting on properties. Coordinates as necessary with other departments for review of applications. Prepare Zoning Verification Letters. Develops exhibits for Planning Commission and City Council reports. Reports to the Planning Director.
Secretary II	1	Answers questions from the public and assists with the intake of applications. Research and support functions for the processing of applications. Reports to the Planning Director.

Figure 12 below illustrates the overall structure of the Planning Department.



**Figure 12  
Organization**



### **Authority**

The Planning Department operates under authority of the following:

- State of Michigan Zoning Enabling Act
- Troy City Charter
- Troy City Code
- Troy Futures Plan

### **Activity**

The majority of applications processed by the Planning Department are associated with Site Plan Reviews. Table 27 below illustrates the number of all application types processed annually over the past four complete Fiscal Years.

**Table 27  
Planning Department Activity**

<b>Application Type</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b> (Projected – Actual Not Available)	<b>% Change</b> 2003-2004 to 2006-2007
Site Plan Review	30	19	25	30	–
Special Use	9	6	17	20	–
Subdivision	5	5	0	5	–
Site Condo	8	9	10	10	–
Rezoning Request	12	16	21	25	–
Planned Unit Development	0	2	2	5	–
Zoning Text Amendments	5	10	19	15	–
Street Vacation	5	1	2	5	–
Zoning Verification	44	26	36	40	–
Site Plan Compliance	N/A	9	13	15	–
<b>TOTAL</b>	<b>118</b>	<b>103</b>	<b>145</b>	<b>170</b>	
<b>% Change</b>	<b>-</b>	<b>-12.7%</b>	<b>+40.8%</b>	<b>+17.2%</b>	<b>+44.1%</b>

The overall activity level of the Planning Department increased by 17.2% between FY 2005-2006 and 2006-2007. Further, over a four year timeframe, the number of applications processed by this Department has increased approximately 44.1%. The activity thus far in the current Fiscal Year is in line to reach similar numbers as Fiscal Year 2006-2007.

## C. PROCESS ISSUES

### Processing Time

Zucker Systems looked closely at opportunities to reduce the time that it takes for applications to be processed as this is always one of the biggest concerns communicated by the development community. This analysis included scrutiny of the policies governing the process, staffing levels, and internal procedures. We did not identify any significant evidence of project delays that could be attributed to failure to meet the identified timelines for an application to be processed. In fact, all information we reviewed demonstrated that the Planning Department is meeting the required timelines as outlined in the Zoning Ordinance. Further, we did not identify any policy, process, or staffing enhancements that would improve the timeliness of application processing. It should be noted that although there are recommendations within this report for establishing performance measures (internal procedures) to ensure that the mandated timelines are met, this should not be seen as an indication that they are presently not being achieved. Managed appropriately, these regulatory processing times are expedient and fair for the applicant.

Sometimes, it is our experience that when complaints are received as to processing timelines they may be exaggerated or communicated by disgruntled applicants who were unsuccessful at obtaining the approvals they desired or by inexperienced applicants who are unfamiliar with the requirements of the processes and who can easily feel overwhelmed by the complicated maze of regulations. Overall, our recommendations do not include “quick fixes” that will dramatically shorten the time it takes for an application to be routed through the approval process.

### Planning Commission

Presently, the City of Troy Planning Department serves as staff support to the City Planning Commission. The Planning Commission has the powers and duties vested in it by the laws of the State of Michigan and the Zoning Ordinance contained in the Code of the City of Troy. The Planning Commission shall consider and make its recommendations to the City Council on any matters referred to it by the City Council relating to such duties including:

- The making and adopting of a master plan for the physical development of the municipality.
- Recommendations related to the adoption of a zoning ordinance for the control of the height, area, bulk, location and use of buildings and premises, and all changes and amendments thereto.

- The recommendation of approval to City Council of all preliminary plats subdividing land, site condominium plans, planned unit developments, some special use approval applications and any amendments or alterations thereof.
- The recommendation to City Council on ordinance text amendments, street and alley vacations or extensions, and historic district designations.
- Acting as the approval authority on site plans and most special use approval applications.

The Planning Commission meets three times monthly: one Regular Meeting and two Study Sessions. Special Meetings can also be scheduled at the request of the Chairman or by a majority of the Commission. The business which the Planning Commission may perform at a Special Meeting may be the same business that the Planning Commission performs at a Regular Meeting. Items requiring a public hearing can only be heard at the scheduled Regular Meeting or at a Special Meeting. Pursuant to the By Laws adopted by the Planning Commission, The Chairperson may call Study Session Meetings, in addition to the two that are routinely scheduled. At Study Session Meetings, the Planning Commission shall not vote on any of the following matters: (1) any matter requiring a public hearing, (2) matters which must be finally approved by the Planning Commission such as Site Plan review, Future Land Use Plan Amendments, Special Use Requests, and (3) matters where the Planning Commission is acting in an advisory capacity, such as, Rezoning Requests, Ordinance Text Amendments, Subdivision Plats, Street and Alley Vacations or Extensions, Historic District Designations, Planned Unit Development Proposals and/or Site Condominiums. It may vote on housekeeping matters such as setting public hearing dates and approval of minutes.

The majority of the regulations governing the process for land use applications specify that applications must be submitted no less than 30 days prior to the date of the Regular Meeting of the Planning Commission. Further, the Zoning Ordinance specifies that for those applications requiring public notification, which is most, the notices shall be sent no less than 15 days prior to the scheduled public hearing date. Because of the labor involved in preparing reports for the Planning Commission and sending out the notices, it is recommended that the City consider modifying the Planning Commission's scheduled meetings to include two Regular Meetings per month and one Study Session. This would eliminate the possible crunch that could occur if several applications are all submitted around the 30-day deadline for processing.

**71. Recommendation: Modify the schedule of meetings for the Planning Commission to include two Regular Meetings and one Special Meeting.**

## **Public Notices**

The Planning Department works with the City Clerk's Office and the GIS Department to prepare the Public Notices that are mailed pursuant to the provisions of the Zoning Ordinances. The notices are printed on random colored card stock (yellow, pink, or red) and are the size of a postcard. There is no identifiable uniformity to the notices that would be readily recognizable as a public notice. It is recommended that the City establish a standard color and format for the notices that get mailed so that they are easily recognized by those that receive them as an official notice.

**72. Recommendation: Establish a uniform color and format for the public hearing notices that are sent out pursuant to the City Zoning Ordinance.**

## **Future Land Use Plan**

The Future Land Use Plan is a long range planning document that includes goals, objectives, and policies for growth and development in the City of Troy. The identified goals, objectives and policies are stated in the text and illustrated in maps that are included as a part of the Plan. The current City of Troy Future Land Use Plan was adopted in January 2002. Under Michigan State law, the Plan must be reviewed every five years after its adoption. A review was conducted in 2006 after which time the Planning Commission and City Council concluded that the existing Future Land Use Plan was in need of a comprehensive update and as such preparation of the new City of Troy Master Plan was initiated. Presently, it is anticipated that the first draft of the Master Plan document will be available for Planning Commission review at the end of 2007.

## **Big Beaver Corridor Study**

The Troy City Council, Troy Downtown Development Authority (TDDA), and the Troy Planning Commission have all approved the initiation of the Big Beaver Corridor Study. The intent of this effort is to catalogue, analyze, and define issues that will begin a process of planning and directing development opportunities along the Big Beaver corridor for years to come.

The Troy City Council and the TDDA looked at ways to retain Troy's position as a regional economic force. As a result, the TDDA commissioned the Big Beaver Corridor analysis. The intent of the study is to evolve the boulevard and adjacent land uses to "World Class" status.

Key concepts of the Big Beaver Corridor Study include:

- Gateways, Districts and Transitions
- Trees and Landscape as Ceilings and Walls

- Walking Becomes Entertainment
- Energetic Dynamic of Mixed Uses with a Focus on Residential
- The Automobile and Parking are No Longer #1.
- Civic Art as the “Wise Sage” of the Boulevard

The first priority of the Planning Commission is to expedite the development of the Overlay District of Big Beaver Road with the Zoning Ordinance changes as a new control mechanism to allow for the implementation of the study. This mechanism (Overlay District) will act as an interim measure until the new Master Plan and the new Zoning Ordinance have been developed and approved, which will take approximately two years.

### **Zoning Ordinance**

The Zoning Ordinance contains the regulations regarding the use of land. The regulations are based on the goals and policies contained in the Future Land Use Plan. The community is divided into various zoning districts and the regulations that govern the use of the land and the placement and size of buildings are identified within the Zoning Ordinance. The Ordinance is continuously reviewed and amended to respond to emerging development issues and changing requirements.

### **Site Plan Reviews**

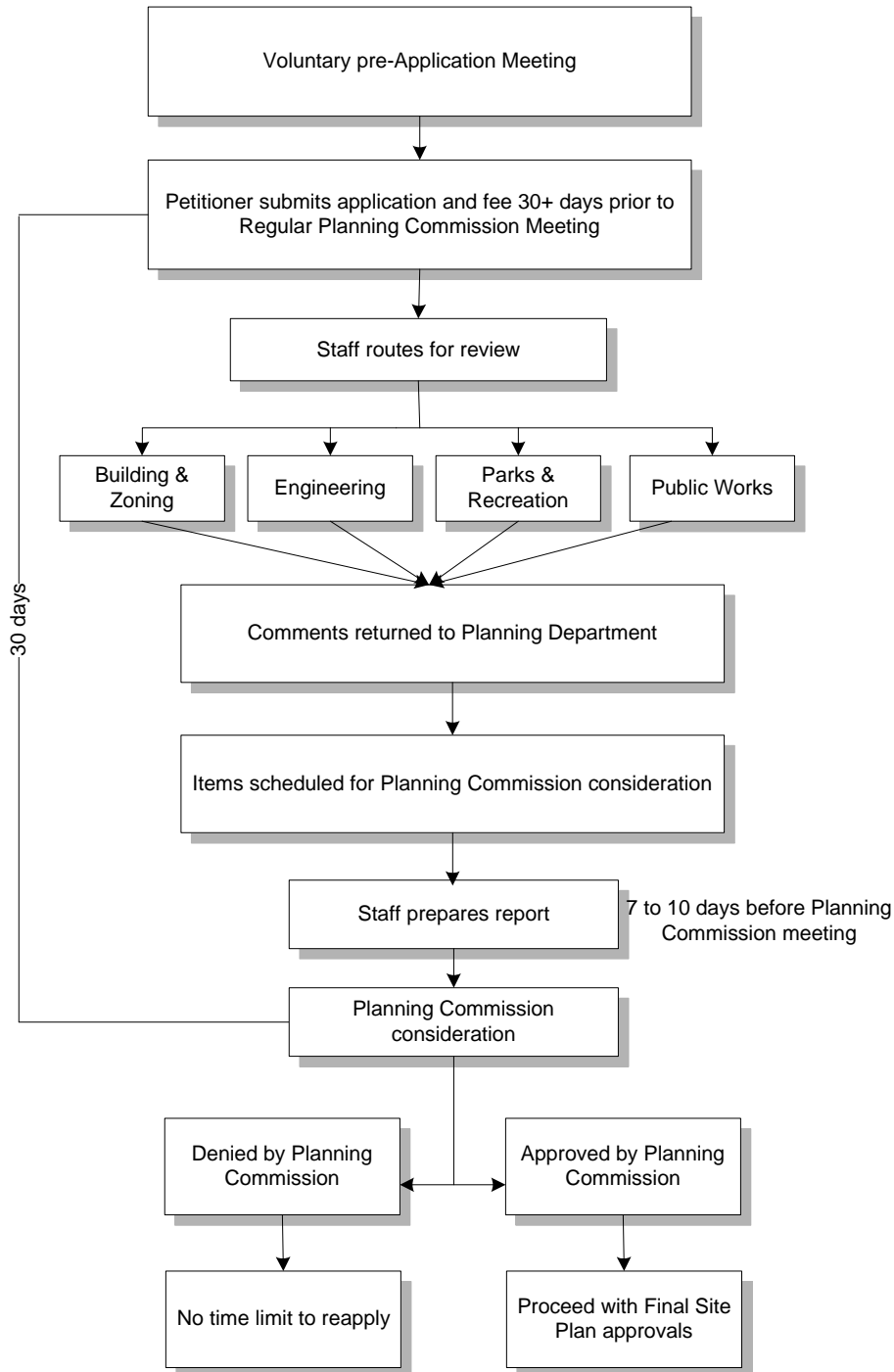
Site Plan Reviews are separated into two phases: Preliminary and Final. The development of any new use, the construction of any new structures, any change of an existing use of land or structure, and all other building or development activities require prior site plan approval. Specifically, site plan review is required for any of the following activities:

- Erection, moving, relocation, conversion, or structural alteration to a building or structure to create additional usable floor space other than a one or two family dwelling.
- Any development other than an individual one-family residential unit in the residential zones.
- Any change in use that could affect compliance with the standards set forth in the Zoning Ordinance.
- Expansion or paving of off-street parking and/or a change in circulation or access for other than a one or two family dwelling.
- Development or construction of any accessory uses or structures at least 1,000 square feet in area or greater, except for uses or structures that are accessory to a one or two family dwelling.

- Any use or development for which submission of a site plan is required per the Zoning Ordinance, including all Special Use Approval applications.
- A substantial revision to a development that has previously received Preliminary or Final Site Plan Approval, as determined by the Planning Director and the Building and Zoning Director.
- Changes to pedestrian access or site and building interconnectivity.

***Preliminary Site Plan Review:*** The Preliminary Site Plan Review process is outlined in the workflow chart below. Petitioners must submit their application to the Planning Department at least 30 days prior to the date of the next Regular Meeting of the Planning Commission. There is no mandatory pre-application meeting although staff encourages applicants to schedule a time to meet with staff from the various reviewing departments at a no-fee meeting that the Planning Department coordinates. According to the information we were provided, this valuable opportunity is rarely formally accepted, although many applicants will informally meet with Planning Department staff at the public counter to discuss a proposal prior to submittal of the application.

**Figure 13  
Preliminary Site Plan Review Workflow**



Once the application is submitted along with the established fee, Planning staff begins their technical review and circulates the application materials to the following reviewing departments as appropriate:

- Building and Zoning



- Engineering
- Parks and Recreation (Landscaping Plans review)
- Public Works

There is no established turnaround time for each of the departments to return their written explanation of relevant issues identified in the review of the Preliminary Site Plan. Because the review is very general at this stage of the Site Plan approval process, the reviewing departments are successfully responding within one to two weeks. As there is only one Regular Meeting of the Planning Commission each month, it is not unusual for there to be two or more Site Plan applications submitted at the same time. Earlier, a recommendation was made to consider scheduling two Regular Planning Commission meetings per month.

Once the list of relevant issues has been compiled, the Planning staff will communicate with the applicant regarding any additional information or modifications that may be necessary for the item to proceed on schedule for placement on the next Planning Commission meeting agenda. Depending upon the magnitude of the needed information and/or modifications, the item can be scheduled for Planning Commission consideration without their completion. The Planning Commission can take action to grant approval of a Preliminary Site Plan with noted requirements for modifications, additional information, or executed documents and/or agreements.

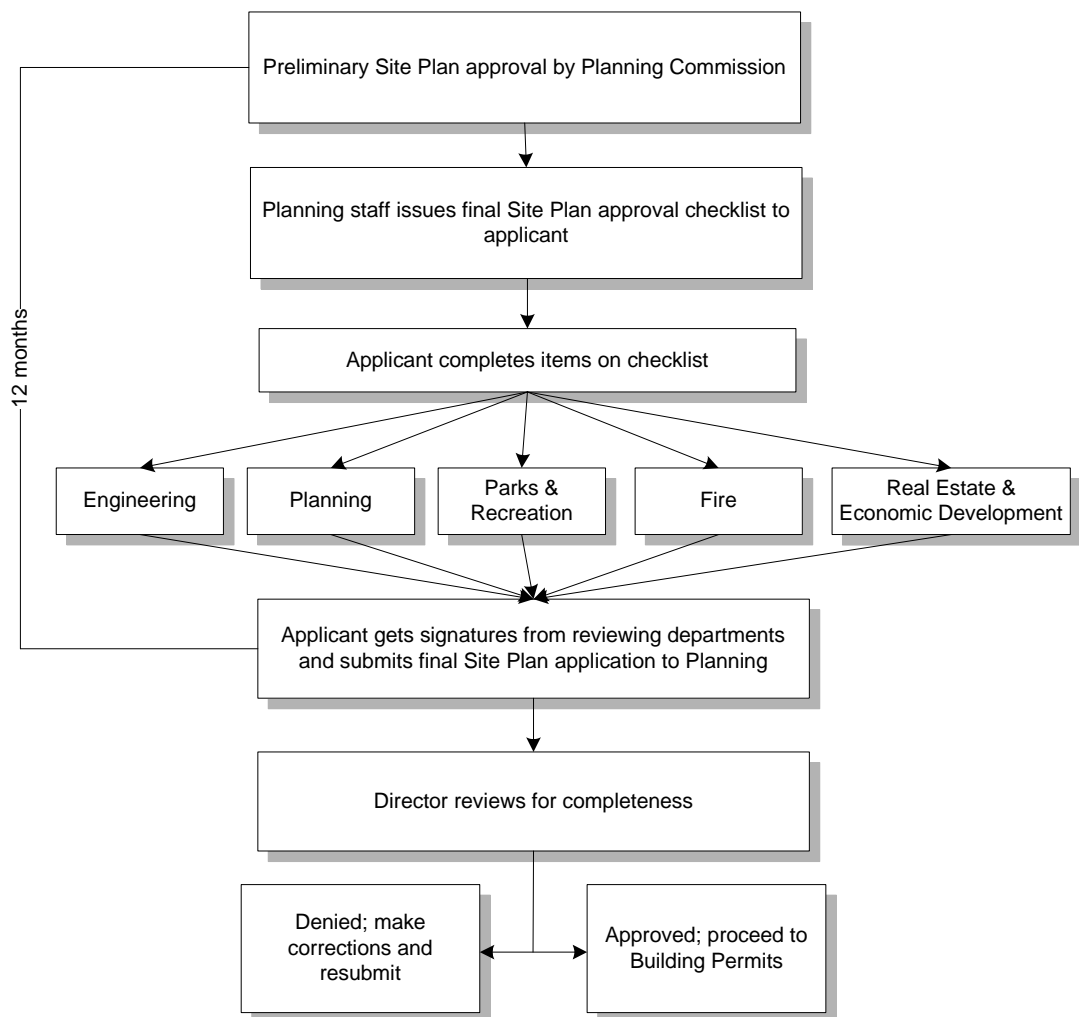
The existing regulations allow the Director to waive the Preliminary Site Plan Review by the Planning Commission if it is determined that a project does not affect compliance with the standards contained in the Zoning Ordinance. We recommend expanding that authority to allow the waiver by the Director under certain circumstances where the site plan substantially conforms with the standards contained in the Zoning Ordinance, with some license for slight deviations that have negligible impacts (such as changes to pedestrian access or building interconnectivity). This could eliminate the need for Planning Commission reviews in some cases and promote the efficient processing of applications.

**73. *Recommendation:* Expand the existing authority of the Planning Director to waive Preliminary Site Plan Review by the Planning Commission to allow for some deviations from development standards contained in the Zoning Ordinance.**

Preliminary Site Plan Approvals are effective for a period of one year. Within that one year period, the petitioner shall submit a complete application for Final Site Plan Approval to the Planning Department.

**Final Site Plan Approval** – The Final Site Plan Approval process is administratively managed by the Planning Department, with no additional review by the Planning Commission unless it is determined by the Planning Director that conditions have changed since the Preliminary Site Plan Approval was first granted, under which circumstance the petitioner must resubmit the application for Preliminary Site Plan Approval. The Final Site Plan Approval process begins immediately following the Planning Commission’s approval of the Preliminary Site Plan. The figure below outlines the Final Site Plan Approval process:

**Figure 14**  
**Final Site Plan Approval Workflow**



Planning staff provides the petitioner with a detailed written checklist-type document that outlines all of the modifications and approvals that must be obtained in order to receive Final Site Plan Approval. It is regarding this process that we received the most

criticisms from the participants in the Engineering Focus Group. We likewise identified several weaknesses in the process.

With the Final Site Plan Approval process beginning immediately following the Preliminary Site Plan Approval, it is important that the petitioner receive the Final Site Plan Approval checklist in a timely manner. While we acknowledge that staff is indeed providing the document within a few days of the Planning Commission's action, we strongly recommend that a timeline be established as policy. In this case, we would recommend that the checklist be provided within three working days following the Planning Commission meeting at which Preliminary Site Plan Approval was granted.

**74. Recommendation: A policy should be adopted that requires staff to provide the Final Site Plan Approval checklist to the petitioner within three working days of the Planning Commission's action to approve the Preliminary Site Plan.**

Once the Final Site Plan Approval checklist is provided, the petitioner is basically on his/her own to complete all of the required modifications, provide all the necessary information and evidence of easements, certifications, etc., and to obtain the necessary approvals from the Engineering, Parks and Recreation, Fire, and Building and Zoning Departments. This can be very complicated and confusing, particularly as it relates to the Engineering Department. The Final Site Plan Approval review by Engineering is very technical and detailed and involves multiple disciplines within the Engineering Department, including, but not necessarily limited to, water distribution, sanitary sewers, storm drainage, and traffic engineering. While much of the review can occur concurrently, the petitioner, particularly the inexperienced petitioner, can easily be confused as to what they should do first. To facilitate the process for the petitioner, at the time that the checklist is provided to them they should have the opportunity to request a meeting with all appropriate departments represented to review the requirements contained therein. This may improve consistency in expectations of all involved parties, including the petitioner and the reviewers.

**75. Recommendation: At the time the Final Site Plan Approval checklist is provided to the petitioner, the petitioner should have the opportunity to request a meeting with the reviewers from each department. The Planning Department should coordinate and facilitate this meeting.**

Because Troy is not utilizing an electronic permit tracking system in the Planning Department, the Planning staff has created their own somewhat archaic methods for monitoring the status and progress of an approved Preliminary Site Plan. This involves notes in or on files, a basic Excel spreadsheet, and staff with strong

institutional memories. Preliminary Site Plan Approval expires at the end of a year if progress towards a Final Site Plan Approval has not been made, and thus staff should at a minimum monitor the efforts of the petitioner.

The lack of an internal system for tracking the progress of a petitioner was a repeated complaint heard primarily from the participants in the focus groups; however staff from various Departments also expressed the desire to have a comprehensive monitoring method. We strongly recommend the implementation of an electronic tracking system shared and accessible by each of the reviewing Departments. This system should include information as to application submittal and resubmittal, review progress by discipline, review status, and pending deadlines/expiration. Further, we recommend that the Planning Department be responsible for the overall tracking of reviews by each Department. This system should be employed for all application types and not limited to Final Site Plan Approvals.

**76. Recommendation:** An electronic permit tracking system should be implemented for the monitoring of application progress. The system should be utilized and accessible by all appropriate departments but monitored by the Planning Department.

**77. Recommendation:** Weekly management reports should be generated from the system and reviewed by Planning staff to monitor review progress/status.

Presently, per the information we were provided by both staff and the participants in the applicant focus groups, it appears that all involved departments are completing their reviews in a timely manner. However, there are no established turnaround times for reviews of site plans or other applications. The establishment of review timeframes provides staff with an excellent management tool for monitoring application progress and to identify specific obstacles or problems that may be causing delays. Perhaps more importantly, however, it gives the petitioner a clear understanding of the process timeline and allows them to establish reasonable expectations. For all application types, we recommend 30 days for first reviews, 15 days for second reviews, and seven days for third reviews, if necessary. The implementation of an electronic tracking system allows for efficient monitoring of these timelines, which should be achieved 95% of the time.

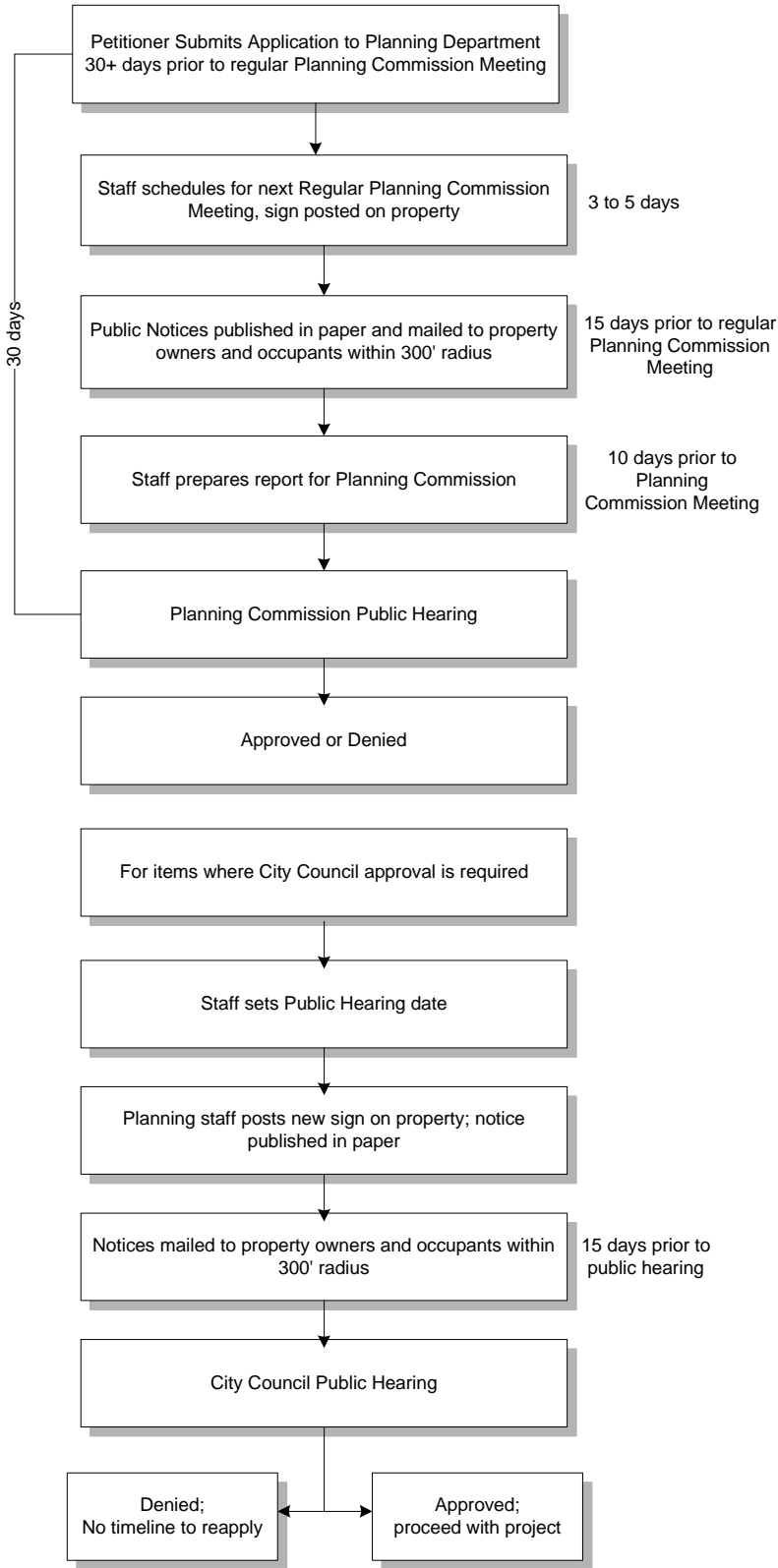
**78. Recommendation:** Review turnaround times should be established for all application types. We recommend 30 days for first reviews, 15 days for second reviews, and seven days for third reviews.

**79. Recommendation:** The above timelines should be successfully met 95% of the time.

### **Special Use Requests**

Special Use Request applications must be submitted 30+ days prior to the Regular Meeting of the Planning Commission. The Planning Commission approves most Special Use Requests. A few Special Use Requests are granted by the City Council. Pursuant to State law, a public hearing is required at the Planning Commission or City Council. The process for a Special Use Request is outlined below:

**Figure 15  
Special Use Request Workflow**



Once the complete application is submitted, Planning staff coordinates with the Public Works Department to have a sign posted on the property as a part of the public hearing notification requirements.

No less than 15 days prior to the scheduled hearing a notice must be sent to the owners of real property within 300 feet of the boundary for the property for which approval has been requested, including properties outside the City's jurisdictional limits. We would recommend expanding that notification period by ten days, thus requiring a 25 day notice. Fifteen days may be too short to give interested parties time to review and react to the proposal. Notice must also be sent to all occupants of structures within 300 feet, again regardless of the jurisdictional boundaries.

**80. *Recommendation:* Expand the current 15-day notification period for mailed notices to 25 days.**

The application is heard at the Regular Planning Commission meeting where a recommendation is made as to approval or denial. Upon the Planning Commission's action, the item is forwarded to the City Manager's Office for scheduling at a City Council meeting. The item must be considered by the City Council at a noticed public hearing. No timeline is established as to when the City Council must hear the item although it is our understanding that typically the public hearing is scheduled within 30 to 45 days. Although there is no statutory requirement, the City Council public hearing date is set at a prior meeting. This is likely done in an effort to maximize public notification of the upcoming hearing. Given that there is a sign posted on the property and mailed notices must be sent prior to the City Council public hearing, the formal setting of the public hearing by the City Council as an agenda item is unnecessary.

**81. *Recommendation:* Items should be scheduled for public hearing at the next available Regular City Council Meeting.**

### **Subdivision Applications**

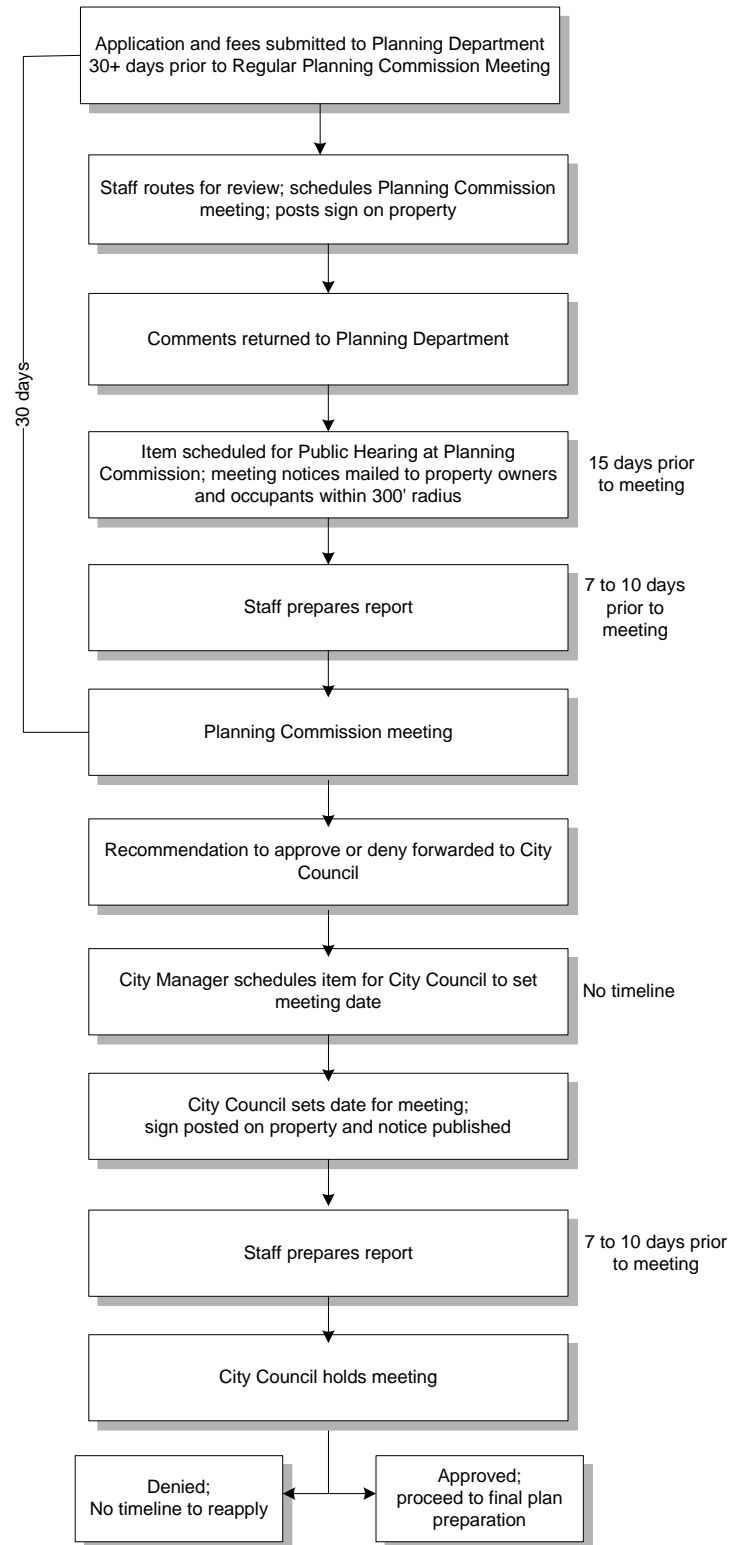
The subdivision process is mandated by the State of Michigan Subdivision Control Act, Act 288, Public Acts of 1967 (as amended). In response to the onerous requirements that are time consuming for applicants and the City, Troy has created an alternative Site Condominium process that accomplishes similar outcomes as a subdivision without as burdensome a process. Thus, the number of applications for subdivisions has decreased over time and staff does not anticipate future applications to have an impact on their workload.

## **Site Condominium Site Plan Reviews**

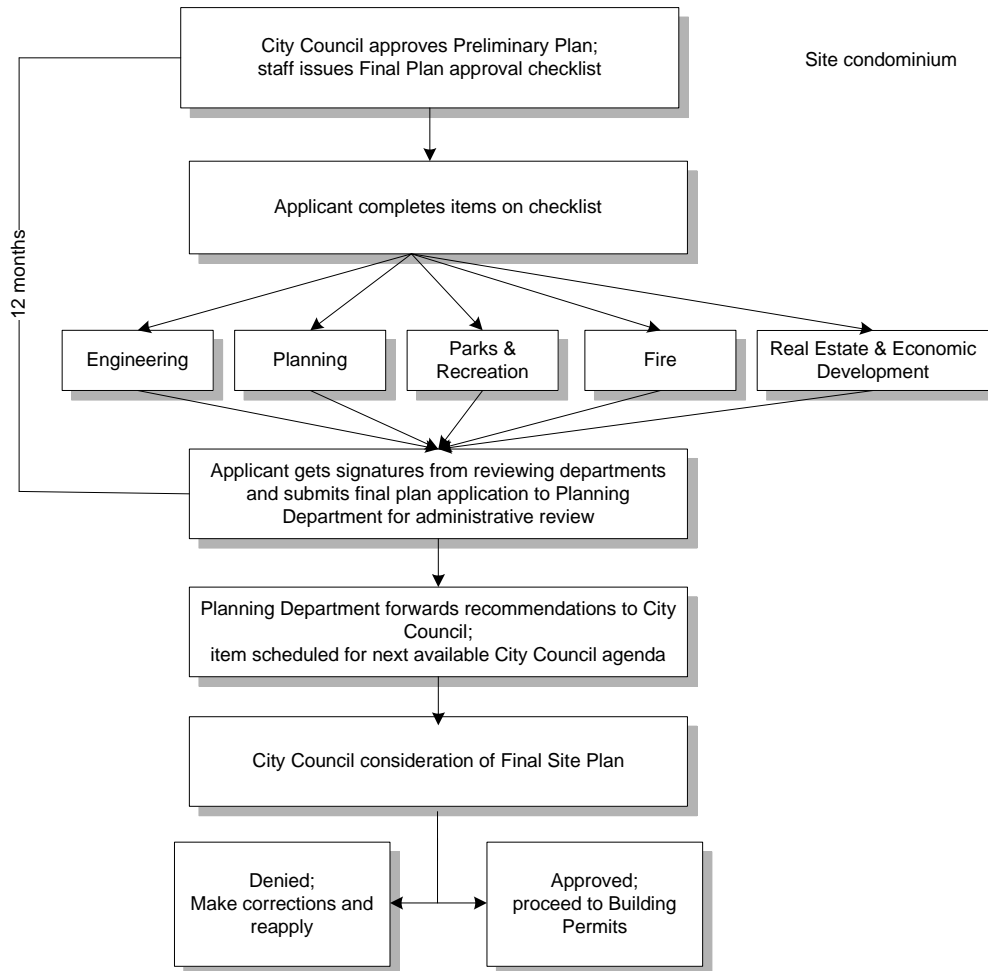
Site Condominium Site Plan Reviews have increased in popularity by landowners and developers as an alternative to the subdivision process. Referred to as “Unplatted One-Family Residential Developments” these projects require Preliminary Plans that must contain all the same information as a Preliminary Site Plan. The Preliminary Plan must be submitted to the Planning Commission for review and recommendation to the City Council. The Planning Commission’s review must be conducted during a public hearing, as must the City Council’s review and approval. Final Plans must also be approved by the City Council following a public hearing. The figure below illustrates the Site Condominium Site Plan Review Process:



**Figure 17**  
**Site Condominium Site Preliminary Plan Review Process**



**Figure 18**  
**Site Condominium Final Plan Approval Process**



The staff review of Site Condominium Site Plan applications, including Preliminary Plan and Final Plan reviews, basically mirrors that for Preliminary and Final Site Plan Reviews, except that a public hearing is required for the Preliminary Plan approval and the Planning Commission makes an advisory recommendation to the City Council. The City Council has the authority for Final Site Plan Approval. Our recommendations likewise mirror those outlined earlier.

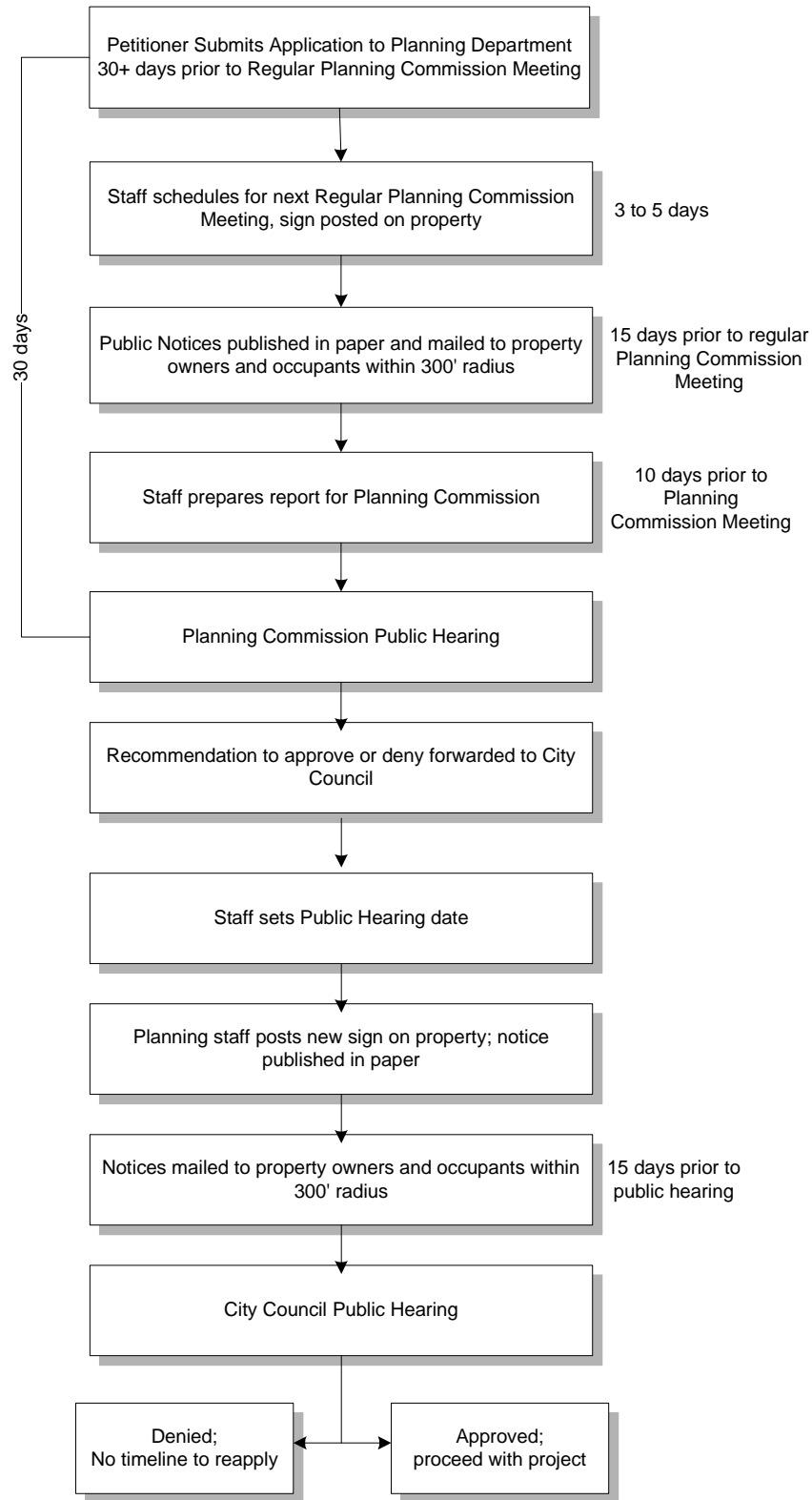
**82. Recommendation:** A policy should be adopted that requires staff to provide the Final Plan Approval checklist to the petitioner within three working days of the City Council’s action to approve the Preliminary Plan.

- 83. Recommendation:** At the time the Final Plan Approval checklist is provided to the petitioner, the petitioner should have the option of requesting a meeting with the reviewers from each department. The Planning Department should coordinate and facilitate this meeting.
- 84. Recommendation:** An electronic permit tracking system should be implemented for the monitoring of application progress. The system should be utilized and accessible by all appropriate departments but monitored by the Planning Department.
- 85. Recommendation:** Weekly management reports should be generated from the system and reviewed by Planning staff to monitor review progress/status.
- 86. Recommendation:** Review turnaround times for Final Plans should be established for all application types. We recommend 30 days for first reviews, 15 days for second reviews, and seven days for third reviews.
- 87. Recommendation:** The above timelines should be successfully met 95% of the time.
- 88. Recommendation:** Items should be scheduled for public hearing at the next available Regular Meeting of the City Council.

### **Rezoning Requests**

A Rezoning Request follows the same procedures as a Special Use Request. The following figure illustrates the process:

**Figure 19  
Rezoning Request Workflow Process**



The recommendation outlined under the section discussing the Special Use Request process applies to the Rezoning Request process, as well.

### **Planned Unit Developments (PUD's)**

The City recently revised its Planned Unit Development requirements in an effort to improve the process. It was determined that Troy's previous PUD process was cumbersome and did not provide the design flexibility needed for sophisticated, multi-phased mixed-use projects. Additionally, a significant amount of detailed site plan and engineering information was required upfront, during the land planning stage. This increased project risk as significant cost would have to be incurred prior to receiving preliminary approval.

The revised ordinance was adopted in an effort to address the identified weaknesses in the previous ordinance. It is difficult to analyze the success of the revisions as no project has completed the process at the time this report was prepared. Previously, the Planning Commission would make a recommendation to City Council following a public hearing during the preliminary approval phase and would not have an opportunity to review the project prior to final approval. The revised ordinance allows the Planning Commission to make a recommendation to City Council twice, once at the preliminary approval phase early in the process, and a second time at an additional public hearing held during final site plan approval.

Prior to the revisions to the ordinance, the City Council saw PUD's twice; early in the process at the public hearing and then for approval of the Final PUD Plan. The new ordinance allows the City Council to see the project as much as three times.

The amount of information required for submittal is the same as it was previously; the new ordinance merely rearranged the order in which it is reviewed. The proposed three-stage process might actually result in more detailed information than currently required.

#### Summary of the Approval Process:

*Step One: Conceptual Development Plan Approval.* The procedure for review and approval of a PUD is a three-step process. The first step is the application for and approval of a Concept Development Plan, which requires a legislative enactment amending the zoning district map so as to reclassify the property as a Planned Unit Development. A proposed Development Agreement shall be included and incorporated with the Concept Development Plan, to be agreed upon and approved coincident with the Plan. The Concept Development Plan and Development Agreement must be approved by the City Council following the recommendation of the Planning Commission. Such action, if and when approved, confers upon the applicant approval of the Concept Development Plan and rezones the property to PUD

in accordance with the terms and conditions of the Concept Development Plan approval.

Prior to the submission of an application for approval of a Planned Unit Development, the applicant shall meet informally with the Planning Department of the City, together with such staff and outside consultants as deemed appropriate by the City. This is a mandatory pre-application meeting with staff.

Following the pre-application meeting, a Concept Development Plan conforming to the application provisions can be submitted. A proposed Development Agreement must be incorporated with the Concept Development Plan submittal and will be reviewed and approved coincident with the Plan. Applications are submitted to the Planning Director, who presents them to the Planning Commission for consideration at a Regular or Special Meeting. The Concept Development Plan constitutes an application to amend the zoning district map, which is required. Before making a recommendation to the City Council, the Planning Commission must hold a Public Hearing on the proposal. Prior to the Planning Commission scheduling a Public Hearing, the applicant is required to arrange for one or more informal meetings with representatives of the adjoining neighborhoods, soliciting their comments and providing these comments to the Planning Commission.

The Planning Commission will make a recommendation to the City Council with regard to the Concept Development Plan. A Public Hearing will then be scheduled before the City Council, at which time the City Council will consider the proposal along with the recommendations of the Planning Commission, the City staff, and comments of all interested parties. The City Council will take action to approve, approve with conditions, or disapprove the Concept Development Plan.

If the City Council approves the Concept Development Plan and the Development Agreement, the zoning map shall be amended to designate the property as a Planned Unit Development. Such action, if and when approved, shall confer Concept Development Plan approval for five (5) years (referred to as CDP Period). The five year CDP Period commences upon the effective date of adoption of the ordinance that rezones the parcel to PUD by City Council.

During the CDP Period, the applicant shall be permitted to submit at least one (or more, at the option of the applicant, if the project is proposed in phases) Preliminary Development Plan application(s), seeking Preliminary Development Plan approval which begins Step Two as described below. Upon the submittal of the first Preliminary Development Plan for one or more phases of the PUD project, the five (5) year expiration period shall no longer apply to the CDP and the CDP shall remain in full force and effect for the development of the entire PUD project, including without limitation, the development of all future phases of the entire PUD Property.

*Step Two: Preliminary Development Plan Approval.*

The second step of the review and approval process is the application for and approval of a Preliminary Development Plan (preliminary site plan) for the entire project, or for any one or more phases of the project. City Council shall have the final authority to approve and grant Preliminary Development Plan approvals, following a recommendation by the Planning Commission.

Following receipt of an application for Preliminary Development Plan approval for either the entire PUD development, or for any one or more phases thereof, the Planning Commission will conduct a public hearing to determine that the Preliminary Development Plan continues to meet and conform to the criteria for, the intent of, and the objectives contained in the approved Concept Development Plan. In the event that the Planning Commission determines that the Preliminary Development Plan does not continue to meet or conform to the criteria for, the intent of and/or the objectives contained in the approved Concept Development Plan, The Planning Commission must make this determination a part of their recommendation to the City Council. If at their subsequent Public Hearing the City Council determines that the Preliminary Development Plan does not conform to the Concept Development Plan, the applicant must either revise the Preliminary Development Plan to so conform or seek an amendment to the Concept Development Plan.

The Planning Commission shall proceed with their review of a Preliminary Development Plan in the manner outlined for Site Plan Review. However, for PUD Preliminary Development Plans, the Planning Commission shall provide a recommendation to City Council who has the authority to approve or deny the Preliminary Development Plan following a Public Hearing.

*C. Step Three: Final Development Plan Approval.* The third step of the review and approval process is the review and approval of a Final Development Plan (the equivalent of a Final Site Plan) for the entire project or for any one or more phases of the project and the issuance of building permits. Final Development Plans for Planned Unit Developments shall be submitted to the Planning Department for administrative review, and the Planning Department, with the recommendation of other appropriate City Departments, has final authority for approval of the Final Development Plans. Construction shall commence in accordance with the Final Development Plan within two (2) years from the date of approval. The applicant may apply to the Planning Commission for a one (1) year extension.

It is our understanding that representatives from the development community participated in the creation of the new ordinance and the general consensus is that it is an improvement over the previous process. It allows the applicant more flexibility by not requiring detailed plans upfront, which were required previously. We strongly support this modification. By granting the Planning Commission two opportunities to review the project, once early on and once later in the project's development, and likewise for the City Council, less information is necessary upfront which was quite

costly and frustrating to applicants. Since the new procedures were only recently adopted and no applicant has experienced the process in its entirety, we will reserve judgment and limit our recommendation to development of a tracking system to manage the staff review process and Planning Commission/City Council Public Hearing schedules. We would also recommend that the City establish similar review turnaround times for the Final Development Plan as recommended earlier for Final Site Plan reviews.

**89. Recommendation:** Once an electronic tracking system is implemented as recommended earlier in this report, PUD applications, along with all application types, should be monitored. This monitoring should include the Final Development Plan reviews by the various departments, as well as a tracking of the Public Hearing schedules and the issuance of construction permits. Access to the tracking system should be available to all appropriate departments.

**90. Recommendation:** Review turnaround times should be implemented for Final Development Plan reviews. These review times should mirror those recommended for Final Site Plan Reviews (30 days for first review, 15 days for second review, and 7 days for any necessary third and subsequent reviews).

Because of the complicated and sometimes political nature of a PUD application, a consultant is retained for processing of these applications. The consultant should be involved from the very beginning, including the pre-application meeting. Involvement by staff in the review process is limited to general oversight, report preparation, sign posting, and noticing. The use of a qualified professional consultant to manage this complicated process is highly supported by Zucker Systems.

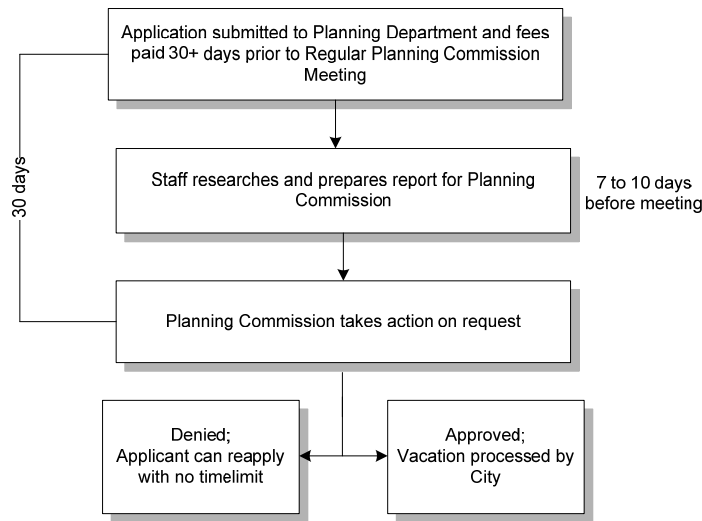
**91. Recommendation:** Continue processing of PUD applications with the assistance of an outside professional consultant, who should be involved from the beginning of the project at the Pre-Application meeting.

## **Street Vacation Applications**

The Street Vacation Application includes rights-of-way and easement vacations. These items require discretionary approval by the Planning Commission at their Regular Meeting. The process is simple and does not require a Public Hearing or notification. The figure below illustrates the workflow for Street Vacation Applications.



**Figure 21  
Street Vacation Applications Workflow Process**



## Zoning Verification Requests

Zoning Verification Letters are issued upon receipt of a written request from a property owner regarding the existing allowable zoning and land use on a specific property. According to staff during our interviews, the number of Zoning Verification Requests increased dramatically approximately four years ago. The actual number of requests was not tracked until fiscal year 2003-2004. That year there were 44 requests. The following year that number decreased by almost 50% to 26, but jumped to 36 requests in 2005-2006 and the approximate number of requests received in 2006-2007 was 40.

When a written request is received, a Planner will research the property, which at times can be time consuming, although most requests don't require more than an hour or two to research. The Planner assigned to processing the written response has indicated that she typically responds to the requests within five working days, which is a reasonable turnaround time. While we are prone to recommend turnaround times that are on the short side, we also recognize the need to allow staff some degree of flexibility given workloads and the time that may be required for a more complicated property research.

**92. Recommendation: Turnaround times for responding to Zoning Verification Requests should be five working days.**

## Site Plan Compliance Inspections

This function of the Planning Department is to facilitate the issuance of a Final Certificate of Occupancy (C of O) for a project. When requested, a Planner will conduct a site visit to determine if all of the Planning related conditions have been met in order for the project to receive sign off and for all deposits and bonds to be released. If it is determined during the inspection that there are conditions on the project that have not been satisfied, the Planner will issue a written explanation for the developer as to what must be corrected in order for the Planning Department to sign off on the project. A re-inspection will be scheduled and the Planner will only inspect those items that had not been identified as being deficient.

According to the information provided by staff and supported by the participants in the Engineering focus groups, the Planning Department is successfully completing the Site Plan Compliance Inspections within fourteen days of the request being received. Typically, two inspections are required. We would recommend that Site Compliance Inspections be completed within five working days of the request being submitted.

### **93. Recommendation: Site Compliance Inspections should be completed within five days of the submittal of the inspection request.**

The following discussion is pertinent for each of the Departments involved in the site plan development process and the C of O sign off function. With the implementation of an electronic tracking system, the Final Site Plan Compliance Inspection will be an integral part of file and project management. The City Code specifies that Temporary C of O's are to expire after six months. Presently, there is no tracking of Temporary C of O's and many are now years old with no C of O issued for various reasons. The City accepts performance bonds as well as cash deposits for security on projects. The lack of proper management of Temporary and Final C of O's has led to literally an excess of a million dollars in unclaimed or unreturned cash deposits and expired performance bonds that can no longer be relied on for completion of improvements. Further, Site Compliance Inspections conducted after a year or more after the project has been occupied and utilized is unlikely to garner a fair and accurate inspection and project ownership has potentially changed hands. The resulting confusion is likely to lead to frustration for everyone involved and in the end, the City is at risk. Thus, we again encourage and recommend the City to implement an electronic tracking system that will allow for efficient management of the project from beginning (the submittal of a land use entitlement application) to end (receipt of a Certificate of Occupancy).

## D. ORGANIZATIONAL ISSUES

### Board of Zoning Appeals

The process for granting a variance from the requirements of the Zoning Ordinance presently falls under the authority of the Director of Building and Zoning. Under the laws of the State of Michigan, variances must be granted by the Board of Zoning Appeals (BZA), whose authorities cannot be transferred to the Planning Commission.

The Board of Zoning Appeals meets once a month and is supported by staff from the Building and Zoning Department. An average of five items are on the BZA agenda each meeting and according to staff 95% of these items are requests for variances related to development standards. The remaining items are related to requests to deviate from building or engineering standards.

As currently written in the Zoning Ordinance, in order to request a variance from development standards, an applicant has to apply for a building permit and have it denied by the Director of Building and Zoning. The applicant can then appeal the denial to the BZA and request a variance.

For projects requiring a site plan, this process seems out of order. A Building Permit cannot be issued until a Final Site Plan has been approved. There was no consensus in our interviews with staff from the Building and Zoning Department, the Planning Department, and the City Attorney's Office as to the proper order of a variance request. There appears to be no established process for the order of events.

Because of the potential for a variance request to cause modifications to a site plan that could be considered substantial, we believe that following order of events is appropriate:

1. Preliminary Site Plan Approval by Planning Commission (and/or City Council as appropriate).
2. Requests for any variances considered and approved by the BZA.
3. Determination by the Planning Director as to impacts of approved variances on Preliminary Site Plan.
4. If it is determined that the variance as conditioned by the BZA substantially alters the approved Preliminary Site Plan, then the Planning Director shall refer the revised Preliminary Site Plan to the Planning Commission for consideration..
5. If it is determined that the variance does not substantially alter the approved Preliminary Site Plan, the petitioner may proceed with an application for Final Site Plan Approval.

To facilitate this process, we recommend eliminating the requirement that a Building Permit be applied for and subsequently denied as the initiation of a variance request. Instead, we recommend that there be an application process for

variance requests that is managed by the Planning Department. The Planning Department would be responsible for researching, preparing, and presenting the report to the BZA, but the noticing requirements would continue to be handled by the Director of Building and Zoning, who serves as the Secretary to the BZA.

**94. Recommendation: Revise the Zoning Ordinance to eliminate the need for a Building Permit application and denial as the initiation of a variance request. Instead, a Variance Request application and process should be created and managed by the Planning Department.**

**95. Recommendation: Variance requests should be processed after Preliminary Site Plan Approval has been granted and prior to Final Site Plan Approval.**

### **Staffing Analysis**

The Planning Department is responsible for processing applications and/or requests for Preliminary and Final Site Plans, Planned Unit Developments, Special Use Requests, Site Condominium Plans, Rezoning, Zoning Verification Letters, and Site Plan Compliance Inspections.

The table below outlines the amount of staff time involved in the processing of these applications and/or requests. It should be noted that the processing of Preliminary and Final Site Plans and Site Condominium Plans is significantly the same and thus, the amount of staff time involved is consistent for these application types.

**Table 28  
Planning Department – Hours Required for Processing**

<b>Application Type</b>	<b>Average Number of Applications Processed Annually</b>	<b>Hours Required for Processing</b>	<b>Total Number of Hours Required Annually</b>
Preliminary Site Plan and Site Condominium Preliminary Plan	26	6	156
Final Site Plan and Site Condominium Final Plan	26	4	104
Special Use Requests	13	4	52
Rezoning Requests	19	4	76
Planned Unit Developments	2	2	4
Zoning Ordinance Text Amendments	10	6	60
Street Vacation Requests	3	1	3
Zoning Verification Letters	37	2	74
Site Plan Compliance Inspections	24 (12 first inspections +12 second inspections)	4	96
<b>Total Hours Required</b>			<b>625</b>

The table below illustrates the calculation of actual number of hours for non application processing functions within the Planning Department.

**Table 29  
Planning Department Non-Application Related Responsibilities**

<b>Planning Staff</b>	<b>Total Number of Available Hours*</b>	<b>Counter Responsibilities (30%)</b>	<b>Administrative and Support Assignments (30% for Principal Planner; 45% for Planners)</b>	<b>Special Projects (20%)</b>
1 Principal Planner	1421	N/A	(426)	(284)
2 Planners	2842	(853)	(1279)	(568)

\* Calculation of Available Hours is as follows: 260 week days x 8 hours, less 80 vacation hours, 96 sick leave hours, 80 holiday hours, 24 personal business hours, 24 personal holiday hours and 20% (366 hours) of acceptable unaccountable time.

Based upon the number of applications, the estimated hours required for processing, and the other responsibilities of staff, the following table illustrates the overall staffing analysis for the Planning Department.

**Table 30**  
**Planning Department Staffing Analysis**

<b>Task</b>	<b>Principal Planner Hours</b>	<b>Planner Hours</b>
Application Processing	425	200
Special Projects	284	568
Counter	n/a	853
Admin/Support Functions	426	1279
Subtotal	1135	2900
Less Available Hours	(1421)	(2842)
Available Hours Remaining	286	(58)

The remaining 228 hours available (286 hours - 58 hours) would accommodate the creation of an additional Variance Request procedure as outlined above without creating a burden on the existing staff, as illustrated below:

Approximate Number of Variance Applications Anticipated Annually = 66  
(Based upon information provided by Building and Zoning Department)

Estimated Number of Hours to Process Variance Applications = 3 hours

Total Estimated Hours Needed for Proposed Variance Procedure = 198 hours

### **Planning Department Website**

Overall, the Planning Department website provides valuable information and it is easy to navigate. The following recommendations are suggested for improving the website:

**96. Recommendation: Include pictures, email links, and direct line phone numbers for all Department staff. The existing contact information for the Director should include his phone number.**

While there is a link to the Planning Commission meeting agendas and minutes, the archived data for meeting agendas only goes back to January 2007, while the meeting minutes are available for meetings dating back to 2000. The current meeting agenda should be posted separately on the website and it should not be combined with the archived agendas until after the meeting has occurred.

**97. Recommendation: Include meeting agendas on website for past meetings dating back at least 3 years.**

- 98.** *Recommendation:* Current Planning Commission Agendas should be posted on the website separately from the archived meeting agendas.
- 99.** *Recommendation:* A section should be added under the Resources information to include the official public hearing notices for the upcoming agenda.
- 100.** *Recommendation:* Immediately following the Planning Commission meeting, an Action Agenda should be prepared that documents the Commission's actions on the items on the agenda. This document should be posted on the website.





## VIII. EMPLOYEE PERCEPTIONS

Two confidential questionnaires were completed by many of the employees in the relevant departments.

A short, closed-ended questionnaire (shown in Appendix B) was completed at staff meetings by thirty eight employees and collected by the consultants. The raw scores and tallies from this survey are also shown in Appendix B. The short questionnaire also asked employees to list pet peeves and give suggestions for improvements. These comments were used as part of our analysis for this report and are shown in Appendix B.

A longer, eight-page questionnaire (shown in Appendix C) was completed by 14 employees and mailed or emailed to the consultants in San Diego to assure confidentiality. Information obtained from these questionnaires was essential to our analysis. The number of questionnaires returned is shown in Table 31. In most of our studies, only half of the employees that complete the short questionnaire take the time to complete the long questionnaire.

**Table 31**  
**Number of Employees Responding to Questionnaires**

Function	Number of Short Questionnaires	Average Response to Short Questionnaire Entire City	Average Response to Short Questionnaire Department	Number of Questions With Average under 3.0 for Department	Number of Long Questionnaires
Attorney	3	3.44	4.28	0	2
Building	19	3.37	3.63	2	5
Engineering	7	3.25	3.55	5	3
Management	5	3.73	n/a	2*	1
Other	1	4.22	n/a	5	0
Planning	3	3.35	3.5	3	3
<b>Total</b>	<b>38</b>				<b>14</b>

\* For entire City

The short, closed-ended questionnaire consisted of a series of statements to be rated by the respondents. Responses were tallied and averaged and the raw scores are displayed in Appendix B. The statements were designed to elicit the mood and feelings of each employee about overall division or department excellence. For each of the 18 statements, the employee was asked to respond as follows:

- |                       |                    |
|-----------------------|--------------------|
| 1 – Strongly Disagree | 4 – Somewhat Agree |
| 2 – Somewhat Disagree | 5 – Strongly Agree |
| 3 – Neutral           | 6 – Not Applicable |

Generally, the higher the rating (i.e., 4's and 5's) the better the employee perceives the subject area and the more excellent the division or department.

We have conducted this survey in many building, engineering and planning departments and divisions. Generally, a score below 3.0 is an indication of issues that need to be addressed. We like to see average scores in the high 3's and 4's. We believe that the scores give a reasonably accurate assessment of the employee's view of their division or department. The Troy average scores for this questionnaire are some of the best we have seen in our studies, indicating general satisfaction of the City and the Department. As is often the case, employees answered more positively for their department than for the City as a whole.

Responses by department are included below.

### **Attorney's Office**

The average score of 4.28 was the highest of all the functions. No employee answered any question below 3.0. These are some of the best scores we have seen.

### **Building Department**

The Building Department had an average score of 3.37 in relation to the entire City and 3.63 as related to the Department. For the Department, scores below 3.0 included:

- Question 8, *I have enough time to do my work as it needs to be done*, had an average score of 2.79. Nine of the 19 employees answered this question with a 1 or 2. This could indicate that the Department should look at work distribution. Comments on this issue will be included elsewhere in this report.
- Question 17, *The applications we receive from the counter are complete and ready for processing*, had an average score of 2.5. Ten of the 16 employees who answered this question scored 1 or 2 on this question. This indicates an area that needs attention.

### **Engineering Department**

The Engineering Department had an average score of 3.25 in relation to the entire City and 3.55 as related to the Department. For the Department, scores below 3.0 included:

- Question 7, *We have an efficient records management and documentation system in our organization*, had an average score of 2.71. four of the seven employees answered 1 or 2 on this question.
- Question 8, *I have enough time to do my work as it needs to be done*, had an average score of 2.71. Four of the seven employees answered this question

with a 1 or 2. This could indicate that the Department should look at work distribution. Comments on this issue will be included elsewhere in this report.

- Question 9, *I am kept abreast of changes that affect me*, had an average score of 2.71. Four of the seven employees answered this question with a 2. This is an area that requires attention by supervisors in the Department.
- Question 12, *Permit processes in the City are neither unnecessarily complex nor burdensome on the applicant*, had an average score of 2.57. Four of the seven employees answered this question with a 2. This is important feedback, given the City's goals for the permit process.
- Question 17, *The applications we receive from the counter are complete and ready for processing*, had an average score of 2.57. Five of the seven employees scored 2 on this question. This indicates an area that needs attention.

## Management

The managers from the Building, Engineering, Fire, Parks, and Planning responded to the questionnaire as a group. The managers' responses to the City as a whole are relevant for this survey. The Managers had an average score of 3.73 in relation to the entire City. Questions scores below 3.0 included:

- Question 12, *Permit processes in the City are neither unnecessarily complex nor burdensome on the applicant*, had an average score of 2.40. Three of the five managers answered this question with a 2. Since managers are in a position to impact the kind of processes the City has, these answers would indicate that the management group needs to be more aggressive in changing the process.
- Question 17, *The applications we receive from the counter are complete and ready for processing*, had an average score of 2.50. Two of the four employees who answered this question scored 2 on this question. This probably matches the low scores received on this question for both the Building and Engineering Departments.

## Planning Department

The Planning Department had an average score of 3.35 in relation to the entire City and 3.50 as related to the Department. For the Department, scores below 3.0 included:

- Question 4, *We have a strong emphasis on training in this organization*, had an average score of 2.67. However, this was answered low by only one of the three employees.

- Question 10, *I am aware of standard turnaround times in our organization for plans and permits as communicated by my supervisor*, had an average score of 2.67. However, this was answered low by only one of the three employees.
- Question 12, *Permit processes in the City are neither unnecessarily complex nor burdensome on the applicant*, had an average score of 2.67. However, this was answered low by only one of the three employees.

**101. Recommendation:** The managers of the permit related departments should review the employee questionnaires for possible improvement ideas. It may be appropriate to review the questionnaire responses as part of a staff meeting.

## **IX. CUSTOMER PERCEPTIONS**

In today's environment, governmental performance is measured by customer satisfaction. In order to determine Troy's performance, we used several techniques consisting of interviews with the Mayor and City Council members, two customer focus groups, and a mail surveys to applicants.

This Chapter includes customer comments for improving the City's development approval/permit process. The intent of this customer input was to elicit views and opinions on positive and negative aspects of activities and to seek ideas for change that will improve and enhance process. However, as would be expected, the focus was on perceived problems.

In considering the results, the reader must bear in mind that, unlike documents and statistics, the views expressed by individuals are subjective and may reflect personal biases. Nonetheless, these views are at least as important as objective material because it is these people, with their feelings and prejudices that work with or are often affected by City activities. A second important consideration is that in analyzing the material, it may not be as important to determine whether a particular response is "correct" as it is to simply accept a response or try to determine why customers feel the way they do. Tom Peters, the noted management consultant, has said that in relation to customer service, "Perception is everything." In other words, perception is reality to the person holding the perception.

It should be noted that the purpose of this chapter is to report on the customer input so that the reader of the report can view the comments as customer perceptions without our editing. These comments are not the conclusions of the consultants. Using our methodology as described in Figure 1 and Section B of Chapter II, the customer comments are taken as one form of input to be merged by input of others and our own judgment. Our specific response is in the form of the various recommendations included in this report.

### **A. MAYOR AND CITY COUNCIL**

We met the Mayor and six City Council members in individual confidential meetings in order to gain a perspective on the City and policy direction for the City. There was not unanimous opinion on all topics but a few points of interest follow.

#### **Overview**

Troy has been a stable community that has risen to the top, sort of the cream. The City has had good Planning and Code Enforcement from the beginning. However, things are changing. Fifteen years ago businesses wanted to come to Troy, now they must be

encouraged – attracting them needs to be dramatic. The City needs to be more competitive. Issues of concern include:

- There are conflicts between residents and the commercial sector.
- The City needs to be user friendly. There is too much red tape, too many loopholes, and the permit process takes too long.
- The City needs to be responsive to change but also respectful of the past and the present.
- Problems need to be addressed before they come to the Council.
- The concern is not just to do it faster but to do it right.

### **Building and Fire**

Permits tend to take too long. There are too many different inspectors. It would be nice if they could be cross-trained.

### **Business Plan**

The City Manager's Business Plan is a useful document. It has not been formally adopted by the Council.

### **Code Enforcement**

There is a need to avoid blight through better Code Enforcement. There may be a shortage of inspectors.

### **Ordinances**

There have been problems with the ordinances. Contract Zoning allows the needed flexibility to work with people. However, some don't like the flexibility of the PUDs.

### **Redevelopment**

The City is almost built out so redevelopment is accepted as inevitable.

### **Staff Attitudes**

There is a need for good staff attitudes. How customers are treated is not as persuasive as some would like. Building is good at the top, Engineering is not always good and Planning is generally good.

Staff need to be more responsive to one-time users of the process. If they don't ask the right question, they don't get the answers they need.

## **Technology**

Good technology for staff is supported.

## **B. FOCUS GROUPS**

Three groups, totaling twenty people who had been applicants in the City's development and permitting process, met on August 14<sup>th</sup>, 15<sup>th</sup> or September 18<sup>th</sup> for two hours at the Community Center. The meetings were held in confidence and no City staff members were present. The groups included architects, developers, and engineers. Focus group comments are included below. Topics are arranged in alphabetical order.

### **Positive Overview**

We have completed over 200 applicant focus groups around the Country and the Troy focus groups were the most positive we have seen. Comments included:

- Staff is very accessible
- City is pro-active in approving development
- Plan check is typically completed first time and City is willing to catch things in the field
- Troy is our favorite city to work in

### **Building Department**

The Department is friendly and is ready to help you, particularly at the upper levels. The cooperation between Building and Fire is excellent. Possible improvement areas include:

- Too rigid on Building Code interpretations – a hard line.
- If applicant doesn't ask the right question, staff may not always draw them out.
- One inspector won't give out email address, others will.
- It can be difficult getting inspector's time.
- There is a concern about third party reviews and would prefer in-house reviews.
- More technical information would be helpful on site plans and PUDs. Not bad, but could be better.
- Staff is accessible but sometimes the secretaries seem to have their mind on something else.

- One of the specialties includes a problem employee and this should be addressed.
- Most get reviews in two to three weeks which is acceptable, but one person says has been averaging four to six weeks.
- Plan check is not as thorough as in some cities.
- The plan may be ready to issue but it can't be found.
- There are problems with mechanical and some problems with plumbing.

### **Big Beaver Corridor Plans**

Many were not familiar with the plans being prepared for the Big Beaver Corridor. Some suggested that they were told that the Traffic Engineer does not agree with the plans.

### **Board of Zoning Appeals**

This function would be better handled by the Planning Department. It should not be necessary to submit plans and be turned down before going to the Board of Zoning Appeals.

### **Engineering Department**

For the most part engineers apply common sense to your project. Also, they will sit down with you and help with problems. The following concerns were expressed in relation to the Engineering Department:

- You are given a list of corrections but after correcting you are given another list.
- The Department is either over staffed or over-specialized.
- There are too many different people required to inspect a site.
- There is a problem getting the engineers to wrap up the project and get the bond released.
- It would be useful to have separate bonds for soils, utilities, etc.
- There is no internal tracking system for monitoring Final Plan review progress.
- The erosion control requirements seem unreasonable.
- When you get your Final Plan review checklist, sometimes it is hard to know where to start and staff doesn't seem to know, either.



## **Fire Department**

The Fire Marshall is accessible and concurrent work by Fire and Building is good.

## **Ordinances**

Having the ordinances online is great. However, the ordinances are not clear on many things and need to be revised.

## **Parks and Recreation Department**

The Parks and Recreation staff are easily accessible. A better approach to trees would be helpful. The response is often, we have enough of these so do something else.

## **Planned Unit Developments (PUDs)**

The PUDs are handled by the consultant and at least one person would prefer to have them handled in house. There is confusion about the submittal requirements for PUDs. The new PUD process is better than the old one.

## **Planning Commission**

The Planning Commission needs more education regarding what is allowed. As an example they start talking about green water with no discussion up front. The problems are not with the staff but with the Planning Commission and Council.

## **Planning Department**

The Planners are accessible and schedules are relatively quick. They have helped coordinate some meeting with residents. At times, the Department could be more aggressive in keeping the Planning Commission on track.

## **Site Plan Review**

Suggestions include:

- Don't require any Final Site Plans to go to the Council
- Some Site Plan approvals should be by staff
- More variation to standards should be allowed
- Accept smaller site plans electronically
- Instead of splitting up the plans, submit full sets so all reviewers have the same plans

## **Technology**

Although electronic plan submittal may work for some, it should not be required for all.

## **Tenant Improvement**

It is taking four to six weeks for approval which is too long.

## **CUSTOMER SURVEYS**

A mail survey was used in this study to obtain applicant customer input. The survey was sent to 738 applicants for development approvals or permits. One hundred surveys were returned for a return rate of 13.6%.

The same mail survey was sent to 219 owner applicants with 29 being returned for a return rate of 13.2%.

These rates were below our normal return rate of 15 to 25 % but still sufficient for analysis.

The overall response to the surveys is shown in Figures \_\_ and \_\_. Question 12 through 25 were designed so that checking a “Strongly Agree” or “Agree” category is a sign of a satisfied customer. A “Disagree” or “Strongly Disagree” is a sign of a dissatisfied customer. The percentages shown in the margins to the right indicate the percent of respondents who disagreed or strongly disagreed with the question statement. The “Not Applicable” category was excluded from this calculation.

Normally, when negative responses of “Disagree” or “Strongly Disagree” exceed 15%, the responses indicate an area of possible concern. Less than 15% normally indicates this category of question is satisfying the customers. Percentages higher than 15% but below 30% are areas that should be examined for possible customer service concerns. Negative percentages of 30% or higher indicate areas needing early attention since roughly one third or more of the customers have concerns about service.

Some believe that only customers who have problems will return a survey of this type. While it is likely that customers with problems may be more likely to return the surveys, our experience with this and dozens of similar surveys indicate that they still produce valid information. For example, we’ve worked in other communities where the negative responses seldom exceeded 15%.

It should also be noted that a survey of this type is not a scientific, statistically controlled sample. Nevertheless, when high numbers of respondents express concerns, they are indications of problems that need to be addressed.

The questionnaires also asked applicants to indicate suggestions and areas for improvement. 72 of the respondents provided suggestions which we used as part of our analysis. These comments are shown in Appendix D.

**102. Recommendation: Building, Engineering and Planning staff should review the customer questionnaires and determine areas where they can be responsive to customer concerns.**

The survey responses from applicants are shown in Figure 22. Two questions had negative comments of 30% negative or higher. Plan check turnaround times in Building were not considered acceptable by 33% of respondents in Question 9. Also, 30% indicated it was longer than other communities, Question 11.

A number of questions had negative responses above 15% but lower than 30%. These are areas that require attention of the departments.

Positive responses of 85% or higher were received for a number of questions including responsive staff (Question 5), courteous staff (Question 14), reasonable conditions of approval (Question 15), accessible staff in Engineering and Planning, (Question 16), good handouts (Question 17) , few errors in the field inspection process (Question 18) and useful information on the website (Question 19).

Positive comments were also received in relation to the Planning Commission, Board of Zoning Appeals and City Council (Questions 20 to 26). However, 30.5% of the applicants felt the input from these bodies in the hearing process was not useful (Question 26).

**Figure 22  
Customer Survey Responses From Applicants**

Development Approval/Permit Process Troy Customer Survey - 100							
1. Please check off the types of development actions you have applied for through the city during the past 12 months.							
<input type="checkbox"/> 87	Building Permit	<input type="checkbox"/> 4	PUD	<input type="checkbox"/> 13	Rezoning	<input type="checkbox"/> 5	Subdivision
<input type="checkbox"/> 3	Conditional Rezoning	<input type="checkbox"/> 20	Variance/Wall Waiver/Board of Zoning Appeals	<input type="checkbox"/> 3	Zoning Compliance Letter	<input type="checkbox"/> 14	Other (list) _____
<input type="checkbox"/> 35	Engineering Approval						
<input type="checkbox"/> 11	Fire Permit						
<input type="checkbox"/> 16	Grading Permit						
<input type="checkbox"/> 5	Land Division						
2. Please indicate what the permit or approval was for.							
<input type="checkbox"/> 11	New single family	<input type="checkbox"/> 29	New commercial or industrial building	<input type="checkbox"/> 45	Remodel or tenant improvement to commercial or industrial building	<input type="checkbox"/> 22	Sign
<input type="checkbox"/> 15	Remodel or addition to single family	<input type="checkbox"/> 10	Subcontractor work (plumbing, fence, landscaping, electrical, mechanical)				
<input type="checkbox"/> 2	Duplex						
<input type="checkbox"/> 6	New multifamily dwelling/condo/PUD						
<input type="checkbox"/> 1	Remodel or addition to multifamily dwelling/condo/PUD						
<input type="checkbox"/> 14	Other (list) _____						
3. Please indicate how often you work with the city's development review and plan checking process.							
<input type="checkbox"/> 20	One time user of the development review and plan checking process						
<input type="checkbox"/> 77	Frequent user of the development review and plan checking process						
QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	% DISAGREE
4. I understand the City's Development Review and Plan Check processes. They are straightforward and not unnecessarily cumbersome or complex in the functions of:							
Building	19	55	4	12	6	2	19%
Engineering	13	35	10	10	3	13	18%
Planning	12	38	7	8	9	12	23%
5. When making an application, I have generally found the City staff to be responsive and helpful in the functions of:							
Building	35	48	2	4	7	1	11%
Engineering	20	38	5	9	1	13	14%
Planning	20	44	5	4	4	11	10%
6. Staff provides prompt feedback on incomplete submittals in the functions of:							
Building	20	43	6	15	9	4	26%
Engineering	15	32	10	14	1	12	21%
Planning	15	37	10	9	4	12	17%

Note: See questions on back also

Figure 22 Continued

Development Approval/Permit Process  
Troy Customer Survey

QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	% DISAGREE
7. In general, the staff has dealt with me in a positive manner, anticipating obstacles early on, redirecting projects to avoid unnecessary delays and providing options where they were available in the functions of:							
Building	27	49	4	9	7	1	17%
Engineering	14	35	16	10	2	8	16%
Planning	18	34	11	7	6	8	17%
8. Development plan checking is complete and accurate. Additional problems did <u>not</u> surface later that should have been caught in the initial review in the functions of:							
Building	18	47	9	11	7	5	20%
Engineering	14	32	12	11	5	12	22%
Planning	11	35	13	10	4	13	19%
9. Plan checking turnaround time is acceptable. I did not have to wait an excessive amount of time to get plans back or find out about problems that needed to be corrected in the functions of:							
Building	21	33	9	14	17	2	33%
Engineering	9	32	14	13	5	11	25%
Planning	8	40	11	7	7	11	19%
10. Codes and policies are applied to staff in a fair and practical manner in the functions of:							
Building	18	56	4	10	8	1	19%
Engineering	11	45	10	6	1	12	10%
Planning	10	47	10	5	3	11	11%
11. The turnaround time for review and approval or disapproval of my application was not any longer with Troy than other cities where I have filed applications.							
Building	23	32	9	12	16	2	30%
Engineering	13	31	14	8	5	10	18%
Planning	13	32	11	7	8	10	21%
12. If project processing is delayed, the delay is typically justifiable. Projects are not delayed over minor issues in the functions of:							
Building	15	37	16	12	9	6	24%
Engineering	12	31	16	10	2	13	17%
Planning	11	34	14	7	5	13	17%
13. Troy is just as fair and practical in its application of regulations as other neighboring cities in the functions of:							
Building	22	49	11	8	6	2	15%
Engineering	15	40	12	6	1	11	9%
Planning	15	42	10	5	3	10	11%

Figure 22 Continued

Development Approval/Permit Process  
Troy Customer Survey

QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	
14. Staff was courteous from the functions of:							
Building	34	49	6	4	3	0	7%
Engineering	19	41	8	3	1	11	6%
Planning	25	41	4	5	1	9	8%
15. The conditions of approval or plan check corrections applied to my project were reasonable and justified from the function of:							
Building	19	54	7	6	5	2	12%
Engineering	9	44	11	4	2	11	9%
Planning	9	47	10	3	5	9	11%
16. The staff of the city were easily accessible when I needed assistance in resolving problems in the functions of:							
Building	25	41	8	13	8	1	22%
Engineering	17	39	11	4	1	11	7%
Planning	20	38	10	5	2	10	9%
17. I found the handouts supplied by the city to be useful and informative in explaining the requirements I must meet for the departments of:							
Building	15	39	26	1	4	8	6%
Engineering	9	31	26	0	1	14	1%
Planning	10	33	24	3	1	11	6%
18. Inspectors rarely found errors in the field during construction that should have been caught during the plan checking process from the departments of:							
Building	17	41	24	6	4	3	11%
Engineering	10	28	23	6	1	13	10%
Planning	17	41	24	6	4	3	11%
19. The City's website provides comprehensive and useful information in the functions of:							
Building	14	31	37	3	1	9	5%
Engineering	11	25	27	3	0	16	5%
Planning	12	26	30	2	0	17	3%
20. The Planning Commission treated me fairly.	13	32	19	5	2	22	10%
21. The Planning Commission members were courteous during the hearing.	12	33	20	5	0	25	7%
22. The Board of Zoning Appeals treated me fairly.	11	25	24	0	2	29	3%
23. The Board of Zoning Appeal members were courteous during the hearing.	11	26	25	0	1	30	2%
24. The City Council treated me fairly.	13	23	24	3	0	30	5%

Figure 22 Continued

Development Approval/Permit Process  
Troy Customer Survey

QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	% DISAGREED
25. The City Council members were courteous during the hearing.	10	24	25	1	1	32	3%
26. I found the input from the Planning Commission, Board of Zoning Appeals, and City Council useful in the hearing process. <input type="checkbox"/> 41 Yes <input type="checkbox"/> 18 No							
27. Was your application ultimately approved? <input type="checkbox"/> 70 Yes <input type="checkbox"/> 1 No							
28. Six departments or divisions are most involved in development review and plan checking in The City of Troy. They are Building, Engineering, Fire, Parks and Recreation, Planning, and Real Estate and Economic Development. If you experienced coordination problems <u>between</u> any two departments or divisions, please list them below. Coordination problems between _____ and _____ Coordination problems between _____ and _____ Coordination problems between _____ and _____							
29. Please add any comments or suggestions you may have that will improve our process or customer service. <b>Please give us at least one idea.</b> _____							

The survey responses from owner-applicants are shown in Figure 23. Most of the responses here were positive. Exceptions were problems with the Engineering reviews with 27% negative for Question 4, 33% negative for Question 7, 19% negative Question 10, and 18% negative for Question 18.

Planning also received some negatives with 23 % Question 7, 21% for Question 4, 17% Question 10, and 17% Question 15.



**Figure 23  
Customer Survey Responses From Owner Applicants**

Development Approval/Permit Process Troy Customer Survey - H - 29							
1. Please check off the types of development actions you have applied for through the city during the past 12 months.							
<input checked="" type="checkbox"/> 28	Building Permit	<input type="checkbox"/> 0	PUD	<input type="checkbox"/> 0	Rezoning	<input type="checkbox"/> 0	Subdivision
<input type="checkbox"/> 1	Conditional Rezoning	<input type="checkbox"/> 0	Variance/Wall Waiver/Board of Zoning Appeals	<input type="checkbox"/> 0	Zoning Compliance Letter	<input type="checkbox"/> 0	Other (list) _____
<input type="checkbox"/> 2	Engineering Approval	<input type="checkbox"/> 0	Other (list) _____	<input type="checkbox"/> 0		<input type="checkbox"/> 0	
<input type="checkbox"/> 0	Fire Permit	<input type="checkbox"/> 0		<input type="checkbox"/> 0		<input type="checkbox"/> 0	
<input type="checkbox"/> 3	Grading Permit	<input type="checkbox"/> 0		<input type="checkbox"/> 0		<input type="checkbox"/> 0	
<input type="checkbox"/> 0	Land Division	<input type="checkbox"/> 0		<input type="checkbox"/> 0		<input type="checkbox"/> 0	
2. Please indicate what the permit or approval was for.							
<input type="checkbox"/> 1	New single family	<input type="checkbox"/> 0	New commercial or industrial building	<input type="checkbox"/> 0	Remodel or tenant improvement to commercial or industrial building	<input type="checkbox"/> 0	Sign
<input type="checkbox"/> 14	Remodel or addition to single family	<input type="checkbox"/> 0	Remodel or tenant improvement to commercial or industrial building	<input type="checkbox"/> 0	Sign	<input type="checkbox"/> 3	Subcontractor work (plumbing, fence, landscaping, electrical, mechanical)
<input type="checkbox"/> 0	Duplex	<input type="checkbox"/> 0	Other (list) _____	<input type="checkbox"/> 0		<input type="checkbox"/> 0	
<input type="checkbox"/> 0	New multifamily dwelling/condo/PUD	<input type="checkbox"/> 0		<input type="checkbox"/> 0		<input type="checkbox"/> 0	
<input type="checkbox"/> 0	Remodel or addition to multifamily dwelling/condo/PUD	<input type="checkbox"/> 0		<input type="checkbox"/> 0		<input type="checkbox"/> 0	
<input type="checkbox"/> 11	Other (list) _____	<input type="checkbox"/> 0		<input type="checkbox"/> 0		<input type="checkbox"/> 0	
3. Please indicate how often you work with the city's development review and plan checking process.							
<input type="checkbox"/> 24	One time user of the development review and plan checking process	<input type="checkbox"/> 4	Frequent user of the development review and plan checking process				
QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	% DISAGREED
4. I understand the City's Development Review and Plan Check processes. They are straightforward and not unnecessarily cumbersome or complex in the functions of:							
Building	8	15	1	2	2	0	14%
Engineering	3	7	1	3	1	3	27%
Planning	2	7	2	1	2	4	21%
5. When making an application, I have generally found the City staff to be responsive and helpful in the functions of:							
Building	13	12	0	1	1	0	7%
Engineering	6	6	1	2	0	3	13%
Planning	5	7	1	0	0	4	0%
6. Staff provides prompt feedback on incomplete submittals in the functions of:							
Building	12	9	2	1	1	1	8%
Engineering	5	7	2	1	0	3	7%
Planning	4	6	3	0	0	4	0%

Note: See questions on back also

Figure 23 Continued

Development Approval/Permit Process  
Troy Customer Survey - H

QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	% DISAGREE
7. In general, the staff has dealt with me in a positive manner, anticipating obstacles early on, redirecting projects to avoid unnecessary delays and providing options where they were available in the functions of:							
Building	9	12	1	3	2	0	19%
Engineering	4	5	1	4	1	3	33%
Planning	4	4	2	2	1	4	23%
8. Development plan checking is complete and accurate. Additional problems did not surface later that should have been caught in the initial review in the functions of:							
Building	6	14	2	1	1	3	8%
Engineering	4	7	2	1	0	3	7%
Planning	4	5	3	1	0	4	8%
9. Plan checking turnaround time is acceptable. I did not have to wait an excessive amount of time to get plans back or find out about problems that needed to be corrected in the functions of:							
Building	10	12	3	0	1	1	4%
Engineering	6	6	4	0	0	3	0%
Planning	5	5	2	0	0	5	0%
10. Codes and policies are applied to staff in a fair and practical manner in the functions of:							
Building	10	12	1	2	2	0	15%
Engineering	4	7	2	2	1	3	19%
Planning	4	6	0	2	0	5	17%
11. The turnaround time for review and approval or disapproval of my application was not any longer with Troy than other cities where I have filed applications.							
Building	10	7	5	1	1	4	8%
Engineering	4	3	5	1	0	5	8%
Planning	4	3	5	0	0	6	0%
12. If project processing is delayed, the delay is typically justifiable. Projects are not delayed over minor issues in the functions of:							
Building	5	8	7	0	1	7	5%
Engineering	3	4	6	0	0	5	0%
Planning	3	4	5	0	0	6	0%
13. Troy is just as fair and practical in its application of regulations as other neighboring cities in the functions of:							
Building	9	9	2	1	2	5	13%
Engineering	4	4	3	1	1	5	15%
Planning	4	4	3	1	0	6	8%

Figure 23 Continued

Development Approval/Permit Process  
Troy Customer Survey - H

QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	
14. Staff was courteous from the functions of:							
Building	13	11	0	2	1	0	<b>11%</b>
Engineering	4	9	2	1	0	3	<b>6%</b>
Planning	4	8	1	0	0	5	<b>0%</b>
15. The conditions of approval or plan check corrections applied to my project were reasonable and justified from the function of:							
Building	10	13	1	2	1	0	<b>11%</b>
Engineering	4	5	3	2	0	3	<b>14%</b>
Planning	4	4	2	2	0	5	<b>17%</b>
16. The staff of the city were easily accessible when I needed assistance in resolving problems in the functions of:							
Building	12	11	1	2	1	1	<b>11%</b>
Engineering	4	7	2	2	0	3	<b>13%</b>
Planning	4	6	2	1	0	5	<b>8%</b>
17. I found the handouts supplied by the city to be useful and informative in explaining the requirements I must meet for the departments of:							
Building	9	9	5	1	1	3	<b>8%</b>
Engineering	3	5	4	1	0	5	<b>8%</b>
Planning	3	3	4	1	0	7	<b>9%</b>
18. Inspectors rarely found errors in the field during construction that should have been caught during the plan checking process from the departments of:							
Building	11	7	2	2	1	4	<b>13%</b>
Engineering	4	3	2	2	0	6	<b>18%</b>
Planning	11	7	2	2	1	4	<b>13%</b>
19. The City's website provides comprehensive and useful information in the functions of:							
Building	8	4	6	1	2	5	<b>14%</b>
Engineering	4	2	6	1	1	4	<b>14%</b>
Planning	4	2	6	1	0	5	<b>8%</b>
20. The Planning Commission treated me fairly.	4	4	6	0	0	14	<b>0%</b>
21. The Planning Commission members were courteous during the hearing.	4	0	5	0	0	18	<b>0%</b>
22. The Board of Zoning Appeals treated me fairly.	3	2	5	0	0	17	<b>0%</b>
23. The Board of Zoning Appeal members were courteous during the hearing.	3	0	5	0	0	19	<b>0%</b>
24. The City Council treated me fairly.	2	0	5	0	0	20	<b>0%</b>

Figure 23 Continued

Development Approval/Permit Process  
Troy Customer Survey - H

QUESTION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE	% DISAGREED
25. The City Council members were courteous during the hearing.	2	0	5	0	0	19	0%
26. I found the input from the Planning Commission, Board of Zoning Appeals, and City Council useful in the hearing process. <input type="checkbox"/> 8 Yes <input type="checkbox"/> 0 No							
27. Was your application ultimately approved? <input type="checkbox"/> 17 Yes <input type="checkbox"/> 0 No							
28. Six departments or divisions are most involved in development review and plan checking in The City of Troy. They are Building, Engineering, Fire, Parks and Recreation, Planning, and Real Estate and Economic Development. If you experienced coordination problems <u>between</u> any two departments or divisions, please list them below. Coordination problems between _____ and _____ Coordination problems between _____ and _____ Coordination problems between _____ and _____							
29. Please add any comments or suggestions you may have that will improve our process or customer service. <b>Please give us at least one idea.</b> _____							

# Appendix A

## Persons Interviewed

**Administration**

Phil Nelson, City Manager

John Lamerato, Assistant City Manager/Finance & Administration

Brian Murphy, Assistant City Manager/Economic Development Services

**Building Code Board of Appeals**

Ted Dziurman, Chairperson

**Board of Zoning Appeals**

Mark Maxwell, Chairman

**Brownfield Redevelopment Authority**

Bruce Wilberding, Chairman

**Building Department**

Mark Stimac, Director

Paul Evans, Inspector Supervisor

Mark Riley, Inspector Supervisor

Gary Bowers, Building Inspector

Rick Pawlowski, Electrical Inspector

Jerry Johnson, Plumbing Inspector

Dennis Koenders, HVAC Inspector

Kandy Griffeth Housing and Zoning Inspector

Mark Anderson, Housing and Zoning Inspector

Rick Kessler, Plan Examiner Coordinator

Mitch Grusnick, Plan Analyst

Pam Pasternak, Secretary

**City Attorney**

Lori Grigg Bluhm, City Attorney

Chris Forsyth, Asst. Attorney

Susan Lancaster, Assistant City Attorney

Allan Motzny, Asst. Attorney

**Community Affairs**

Cindy Stewart, Director

**Customer Solutions**

Beth Tashnick, City Manager's Office

**Economic Development**

Pam Valentik, Real Estate and Economic Development

**Engineering Department**

Steve Vandette, City Engineer  
John Abraham, Deputy City Engineer/Traffic Engineer  
Bill Houtari, Deputy City Engineer  
Jennifer Lawson, Environmental Specialist  
Scott Finlay, Civil Engineer  
Antonio Cicchetti, Civil Engineer  
Joe Lietaert, Engineering Inspector

**Fire Department**

Dave Roberts, Assistant Fire Chief (Fire Prevention)

**Mayor and City Council**

Louise E. Schilling, Mayor  
Robin E. Beltramini, Council  
Christina Broomfield, Council  
Wade Fleming Council  
Martin Howrylak, Council  
David A. Lambert  
Jeanne M. Stine, Council

**Other**

Dick Carlisle, Planning Consultant

**Parks and Recreation**

Ron Hynde

**Planning Commission**

Bob Schultz, Chairman

**Planning Department**

Mark Miller, Planning Director  
R. Brent Savidant, Principal Planner  
Paula Preston-Bratto, Planner  
Dick Carlisle, Planning Consultant  
Kathy Czarnecki, Secretary  
Ron Figlan, Planner

# **Appendix B**

## **Employee Short Questionnaire**



### Attorney City

	Emp #1	Emp #2	Emp #3	Ave
#1	3	4	4	3.67
#2	2	4	3	3.00
#3	4	2	5	3.67
#4	4	2	4	3.33
#5	3	4	3	3.33
#6	4	5	4	4.33
#7	4	5	4	4.33
#8	3	3	N/A	3.00
#9	3	3	N/A	3.00
#10	3	3	N/A	3.00
#11	3	3	N/A	3.00
#12	4	4	2	3.33
#13	4	5	3	4.00
#14	3	3	4	3.33
#15	5	2	2	3.00
#16	5	5	4	4.67
#17	3	2	N/A	2.50
#18	3	4	N/A	3.50
<b>Ave</b>	<b>3.50</b>	<b>3.50</b>	<b>3.50</b>	<b>3.44</b>

### Attorney Department

	Emp #1	Emp #2	Emp #3	Ave
#1	4	5	4	4.33
#2	5	5	5	5.00
#3	4	5	5	4.67
#4	5	5	5	5.00
#5	4	5	5	4.67
#6	5	5	5	5.00
#7	4	5	4	4.33
#8	5	2	5	4.00
#9	4	4	5	4.33
#10	5	4	N/A	4.50
#11	5	5	N/A	5.00
#12	4	3	N/A	3.50
#13	4	3	N/A	3.50
#14	4	3	N/A	3.50
#15	5	3	N/A	4.00
#16	5	3	N/A	4.00
#17	3	3	N/A	3.00
#18	5	5	4	4.67
<b>Ave</b>	<b>4.44</b>	<b>4.06</b>	<b>4.70</b>	<b>4.28</b>

**Question #19**

**Please list any “pet peeves” or concerns about your job, division, department as related to development processing activities.**

1. Outsiders are not given easy directions to interpret code or complete file forms.
2. Micro-management

**Question #20**

**Please provide at least one suggestion or recommendation for improvement related to your job as related to development processing activities.**

1. When dealing with a zoning and/or planning issue, it would be beneficial if there was a method to access the planning or building department file by electronic means.
2. Since I am in the legal department, I have to depend on the files of other departments in court cases. For me, keeping other departments files up to date and easy to locate would help.
3. “Less is more” – less micro-management, less injection of legal in development process.

### Building Inspection City

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	Ave
Emp #1	3	3	5	5	4	4	4	4	3	N/A	N/A	3	3	4	4	N/A	N/A	3	3.71
Emp #2	3	4	3	3	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3.17
Emp #3	5	5	5	4	4	4	3	3	4	2	4	2	2	2	4	5	2	2	3.44
Emp #4	3	4	5	4	5	5	5	2	2	5	3	5	5	5	4	5	3	4	4.11
Emp #5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	N/A	N/A	N/A	N/A	2.00
Emp #6	5	4	5	5	5	5	4	3	4	4	N/A	5	5	5	4	5	4	5	4.53
Emp #7	4	4	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3.17
Emp #8	1	2	3	2	3	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.17
Emp #9	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3.00
Emp #10	2	1	5	3	4	4	4	1	2	5	N/A	N/A	3	4	5	5	N/A	4	3.47
Emp #11	4	4	4	3	3	3	2	4	4	N/A	N/A	N/A	N/A	N/A	4	5	N/A	N/A	3.64
Emp #12	5	5	4	5	4	5	3	4	4	5	3	4	N/A	5	5	5	N/A	5	4.44
Emp #13	2	2	1	1	3	4	4	1	1	3	3	4	4	5	5	5	1	2	2.83
Emp #14	2	3	3	3	4	2	N/A	4	2	N/A	N/A	3	3	3	N/A	5	N/A	N/A	3.08
Emp #15	2	2	4	4	2	3	2	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	2.78
Emp #16	3	2	3	3	3	4	4	3	3	1	3	3	3	3	3	2	3	3	2.89
Emp #17	4	4	4	3	3	4	3	3	3	4	3	3	2	3	5	5	2	3	3.39
Emp #18	1	1	4	1	5	4	4	2	2	5	5	1	5	2	5	5	2	1	3.06
Emp #19	2	3	4	3	4	5	2	N/A	2	N/A	2	2	4	2	5	5	N/A	4	3.27
<b>Ave</b>	<b>3.00</b>	<b>3.11</b>	<b>3.78</b>	<b>3.22</b>	<b>3.72</b>	<b>3.78</b>	<b>3.31</b>	<b>2.87</b>	<b>2.88</b>	<b>3.58</b>	<b>3.18</b>	<b>3.14</b>	<b>3.43</b>	<b>3.38</b>	<b>4.13</b>	<b>4.40</b>	<b>2.60</b>	<b>3.13</b>	<b>3.37</b>

### Building Inspection Department

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	Ave
Emp #1	4	4	5	5	4	5	4	4	4	N/A	N/A	4	4	4	5	4	2	4	4.13
Emp #2	4	2	3	5	5	3	2	2	4	4	4	2	3	3	5	5	2	2	3.33
Emp #3	4	2	3	4	2	4	2	1	2	2	4	2	2	2	4	5	2	2	2.72
Emp #4	3	4	5	4	5	5	5	2	2	5	3	5	5	5	3	5	3	4	4.06
Emp #5	5	4	4	4	4	4	N/A	2	4	4	4	4	4	N/A	5	5	2	4	3.94
Emp #6	5	4	5	5	5	5	4	3	4	4	N/A	5	5	5	4	5	4	5	4.53
Emp #7	5	5	5	5	5	5	4	5	5	4	3	4	4	4	5	5	4	5	4.56
Emp #8	4	5	4	4	5	4	5	2	5	5	5	5	2	2	4	5	2	4	4.00
Emp #9	3	4	5	5	3	5	4	4	4	2	2	4	3	3	4	5	1	5	3.67
Emp #10	2	1	5	3	4	4	4	1	2	5	N/A	N/A	3	4	5	5	N/A	4	3.47
Emp #11	3	3	4	1	3	3	1	4	4	N/A	N/A	N/A	N/A	N/A	4	5	N/A	N/A	3.18
Emp #12	5	5	4	4	4	5	3	4	5	5	3	4	4	5	5	5	N/A	5	4.41
Emp #13	1	1	1	1	3	4	4	1	1	3	3	4	4	5	5	5	1	2	2.72
Emp #14	4	5	3	2	4	4	4	3	2	4	5	5	4	5	2	5	3	4	3.78
Emp #15	4	2	3	5	4	4	2	4	4	2	3	3	5	3	5	5	4	3	3.61
Emp #16	3	4	5	3	3	3	4	4	3	1	3	4	4	3	4	4	4	4	3.50
Emp #17	4	4	5	5	4	5	2	4	2	4	2	2	2	2	5	5	2	2	3.39
Emp #18	1	1	4	1	5	4	4	1	2	5	5	1	5	2	5	5	2	1	3.00
Emp #19	2	4	5	2	4	5	2	2	2	4	4	2	4	2	5	5	2	2	3.22
<b>Ave</b>	<b>3.47</b>	<b>3.37</b>	<b>4.11</b>	<b>3.58</b>	<b>4.00</b>	<b>4.26</b>	<b>3.33</b>	<b>2.79</b>	<b>3.21</b>	<b>3.71</b>	<b>3.53</b>	<b>3.53</b>	<b>3.72</b>	<b>3.47</b>	<b>4.42</b>	<b>4.89</b>	<b>2.50</b>	<b>3.44</b>	<b>3.63</b>

### **Question #19**

**Please list any “pet peeves” or concerns about your job, division, department as related to development processing activities.**

1. Plan review department tries to run inspection department sometimes. Certificate of occupancies are not cleared in a timely manor due to staff shortage of clerks. It is very hard to get and clear outstanding permits due to homeowners not being home. Violation notices are not sent out right away sometimes due to staff shortages.
2. Lines of communication not always complete. Seems to be a lot of extra loud talking, etc, among co-workers that is distracting – could be more productive, without so many distractions.
3. Plan review process must be reorganized to be more efficient and timely.
4. The department is always short on clerical staff which causes delays in every process conducted by the department. Heavy work loads reduce time spent with applicants – creates poor service, creates stress on the employee.
5. I think there should be a weekly staff meeting to let all employees know the latest developments within the city.
6. Lack of computers for inspectors.
7. Not enough communication. Not enough training for inspectors on computers.
8. Need own computer.
9. Employees are the last to know when any changes are going to occur, so when a citizen asks a question we don't know the answer. Lack of communication.
10. Lack of computer training. Timely evaluations.
11. A great place to work as part of the team in working toward a place for people to live and conduct business.
12. Employees are not kept abreast of changes that occur. Employees are not consulted about things that would improve work experience. City manager never comes out of his office; some employees do not even know what he looks like. Building Department is five to seven years behind in returning C of O's. Building Department has had one staff member on sick leave since October 2006 and not replaced.
13. Incomplete applications use valuable review time. Inquiries either in person or phone are often sent to Building Department by other city departments who should have been staffed to handle themselves.
14. Lack of access to computer and time to access files. No personal e-mail or access to Internet.
15. Equalizer software not good at identifying where resources are allocated or needed regarding code enforcement. Code Enforcement process appears to be more based on supporting a legal court case rather than achieving compliance. Code officers appear to have been under-trained and micro-managed in the past and this is evident in day to day operations. Code officers appear to be “under-empowered.”

16. Part time help when others are on vacation or medical leave. Need more computer site time. Backing of office supervision in making field decisions.
17. Too much “handwriting” going on – why not let the computer do the work? Much duplication of efforts – related to above – not utilizing the computer. Phone system would like an easier, quicker way to go into voicemail. Inspectors are pulled between phones and getting to the counter during their time in the office, creating stress. Scheduling times in advance with inspectors is impossible, which is problematic.

### **Question #20**

**Please provide at least one suggestion or recommendation for improvement related to your job as related to development processing activities.**

1. Provide a plan review software tracking system in place. Not allow commercial contractors to pull any permits until they cleared outstanding permits or at least letters of commitment from contractors. Residential plan review we do make sure or clear outstanding permits of contractors.
2. Email new procedures so that we can have a record of them and if someone is not at their desk when the new procedure is revealed.
3. Provide computers for each inspector.
4. Department meeting (round table discussions) to discuss topic of concern improvements.
5. Training in the use of electronic equipment.
6. Field computers.
7. Provide regular staff meetings, Provide computers for inspectors.
8. More computers are needed. Computer available to customers at the counter.
9. Need own computer.
10. More communication between managers, supervisors and employees.
11. When building permits are submitted to department, the clerks should check to see that all information is obtained, so that further time is not needed to obtain this information.
12. More electronic records. Numerous other duties limit time spent on review.
13. Laptop for each inspector.
14. Equalizer is clumsy – replace it with something more intuitive. Train code officers on better PR skills/sales skills/handling objections – it is not clear to me they understand how visible they are to the community.
15. List of part time inspectors that can be called in to help. At least have one computer for two people instead of one computer for four people. The inspector is considered to be wrong before all the facts are known – obtain facts first.
16. Give each inspector his/her own laptop. Provide tablet PC with wifi and system software compatible with other departments. This could take advantage of the new Oakland County wifi system for cheap real time information.

## Engineering City

	Emp #1	Emp #2	Emp #3	Emp #4	Emp #5	Emp #6	Emp #7	Ave
#1	4	4	4	1	4	4	4	3.57
#2	3	2	2	2	4	3	4	2.86
#3	3	2	2	1	4	4	5	3.00
#4	4	4	3	1	5	3	3	3.29
#5	3	3	4	2	4	3	4	3.29
#6	4	4	4	3	4	4	4	3.86
#7	2	4	3	1	1	3	4	2.57
#8	3	N/A	3	1	4	3	4	3.00
#9	3	4	1	4	4	2	2	2.86
#10	4	N/A	2	5	2	N/A	4	3.40
#11	3	N/A	4	4	3	N/A	5	3.80
#12	4	3	3	2	3	2	2	2.71
#13	4	N/A	3	1	3	5	4	3.33
#14	2	N/A	3	3	3	4	2	2.83
#15	5	5	5	3	2	2	5	3.86
#16	5	5	5	2	5	5	5	4.57
#17	4	N/A	3	2	2	3	4	3.00
#18	4	N/A	1	3	3	3	2	2.67
<b>Ave</b>	<b>3.56</b>	<b>3.64</b>	<b>3.06</b>	<b>2.28</b>	<b>3.33</b>	<b>3.31</b>	<b>3.72</b>	<b>3.25</b>

## Engineering Department

	Emp #1	Emp #2	Emp #3	Emp #4	Emp #5	Emp #6	Emp #7	Ave
#1	5	4	5	2	4	4	4	4.00
#2	4	5	4	4	5	3	2	3.86
#3	4	3	4	1	4	4	5	3.57
#4	4	3	3	1	5	3	2	3.00
#5	3	4	5	3	4	3	4	3.71
#6	4	5	5	4	4	5	4	4.43
#7	2	4	4	1	2	4	2	2.71
#8	2	2	2	1	4	4	4	2.71
#9	3	2	2	4	4	2	2	2.71
#10	4	5	3	5	3	N/A	5	4.17
#11	2	5	5	4	4	N/A	5	4.17
#12	4	3	2	2	3	2	2	2.57
#13	4	4	5	1	3	5	4	3.71
#14	4	5	5	3	4	4	2	3.86
#15	5	5	5	4	2	2	5	4.00
#16	5	5	5	5	5	5	5	5.00
#17	4	2	2	2	2	2	4	2.57
#18	4	2	1	3	4	4	4	3.14
<b>Ave</b>	<b>3.72</b>	<b>3.78</b>	<b>3.72</b>	<b>2.78</b>	<b>3.67</b>	<b>3.50</b>	<b>3.61</b>	<b>3.55</b>

### **Question #19**

**Please list any “pet peeves” or concerns about your job, division, department as related to development processing activities.**

1. Improving staff relations within the departments (attitudes in working with each other from the office to the field). More team effort.
2. Some decisions are made for political or pressure reasons rather than normal establishing processes.
3. In my position, I only spend 30% of time on “permitting.” I have many many other job duties that may take precedence. However, I am often pulled by several different departments into opposite directions, depending on the other department needs. The variety of activities and responsibilities lends itself to be interesting, yet I never have enough time to do projects, reviews, reports, etc. to my best ability and still keep others happy.
4. Working with a developer to fully complete a site and for final approval to be issued by all departments. A final CO may be issued by Building Department without Engineering Department final approval of the public utilities. Letter of credits that expire without site completion. Lack of a “hammer” to complete a private development. Increasing cash deposits/fees has been looked at in the past as a negative even though it is helpful to complete a site.
5. Review fees should be paid before reviews are started. A lot of staff time is spent on projects that do not go anywhere. Building Department needs to think outside the box, i.e., approved materials highway construction not in their “code” cannot be used in a parking lot. This “code” should only apply to the building not the entire site.
6. Communication is lacking in keeping all staff up to date on current projects, changes and suggestions. More accountability in completion of reviews. Too many things are found out through the “grapevine.”

### **Question #20**

**Please provide at least one suggestion or recommendation for improvement related to your job as related to development processing activities.**

1. Improving our “finals” process, from right of way permits to project finals.
2. Improved communications regarding policy/procedure changes within the department.
3. I think the permits on equalizer could be more streamlined and easier to access than they are.
4. Making sure that other departments, as well as co-workers in your own department, understand that permit review is not all that I do. Staff training on attitude and how they need to treat out “customers.” I often end up dealing with

people who were treated rudely at the counter, so the customer already has a chip on their shoulder when they get to me. Staff training about entitlement. There are staff who feel that they are above doing certain jobs, or have enough seniority that they don't have to do a job.

5. Some type of one-stop, tell all process to guide “new” developers through the process. Some communities provide potential customers with a guide or manual to take them through the development process from start to finish. With marginal properties primarily remaining, we get a lot of “arm chair” developers who do not realize what is involved in going from a raw piece of property to a finished site.
6. A flow chart for developers of our process, i.e., commercial through Building, Residential through Engineering. Inspections on a commercial site should be handled by one department with full time inspection.
7. The city should hold itself to the same standard as we expect and require from developers on city projects. More city-wide accountability. Many complaints come from developers with examples of city projects meeting certain criteria and not being penalized. Provide clear concise requirements on grey area issues such as as-built plan requirements. Enforce Engineering Department development standard requirements and getting the electronic files for as-builts that we require. Increase the fines and bond monies to ensure that we get the information that we require on projects.



## Management City

	Emp #1	Emp #2	Emp #3	Emp #4	Emp #5	Ave
#1	4	4	4	2	4	3.60
#2	5	4	4	4	4	4.20
#3	3	4	5	4	4	4.00
#4	2	4	4	4	2	3.20
#5	4	4	5	4	5	4.40
#6	4	5	5	2	4	4.00
#7	4	3	4	3	4	3.60
#8	4	4	4	3	4	3.80
#9	N/A	4	4	5	5	4.50
#10	N/A	N/A	3	3	4	3.33
#11	4	N/A	3	3	3	3.25
#12	2	3	3	2	2	2.40
#13	4	4	4	3	2	3.40
#14	3	3	4	3	4	3.40
#15	5	5	3	5	5	4.60
#16	5	5	4	5	5	4.80
#17	N/A	2	3	3	2	2.50
#18	5	4	3	5	4	4.20
<b>Ave</b>	<b>3.87</b>	<b>3.88</b>	<b>3.83</b>	<b>3.50</b>	<b>3.72</b>	<b>3.73</b>

### Question #19

Please list any “pet peeves” or concerns about your job, division, department as related to development processing activities.

8. Final site acceptance takes too long. Is not a high priority with most departments and is very frustrating to the owners/developers. Many cash deposits are left unclaimed by developers rather than fixing the problems and getting the deposit back.
9. Turnaround times, interruptions, and lack of response.
10. Fire safety/fire protection related concerns that are identified in the preliminary plan review are sometimes overlooked/omitted at time or final planning Commission approval, i.e., PUD approval, making such concerns not achievable.
11. Although the city pays well and has good benefits, city council and city manager’s office does not provide a “quality” work space. Need clerical staff. Need to improve staff: retirement, right job, new staff positions.
12. There are times when there is little awareness of impact between the reviews by each approving agency/division. Others are affected and this sometimes lags in the others finding this information.

**Question #20**

**Please provide at least one suggestion or recommendation for improvement related to your job as related to development processing activities.**

1. More frequent meetings with those departments and staff involved with the process to discuss the development issues important with that site, example: traffic, environmental, roads, access, etc.
2. Online permits and more online information.
3. Closer coordination/communication between Fire and Planning.
4. Provide mandatory training for staff. Also the funding to provide training. New city hall.
5. Improvement/changes to tree ordinance for tree preservation. This would result in less subjectivity to review.

**Other City**

	<b>Emp #1</b>	<b>Ave</b>
<b>#1</b>	4	<b>4.00</b>
<b>#2</b>	3	<b>3.00</b>
<b>#3</b>	4	<b>4.00</b>
<b>#4</b>	4	<b>4.00</b>
<b>#5</b>	2	<b>2.00</b>
<b>#6</b>	4	<b>4.00</b>
<b>#7</b>	1	<b>1.00</b>
<b>#8</b>	4	<b>4.00</b>
<b>#9</b>	3	<b>3.00</b>
<b>#10</b>	2	<b>2.00</b>
<b>#11</b>	2	<b>2.00</b>
<b>#12</b>	3	<b>3.00</b>
<b>#13</b>	3	<b>3.00</b>
<b>#14</b>	3	<b>3.00</b>
<b>#15</b>	5	<b>5.00</b>
<b>#16</b>	5	<b>5.00</b>
<b>#17</b>	2	<b>2.00</b>
<b>#18</b>	4	<b>4.00</b>
<b>Ave</b>	<b>3.22</b>	<b>3.22</b>

**Question #19**

**Please list any “pet peeves” or concerns about your job, division, department as related to development processing activities.**

1. Each department files a set of plans and associate paper in their department. Under that department’s ID#. Difficult to walk into another department and request information from a specific file or for a specific project. Often start project in

Planning and then it goes to Building. Often duplicate work when dealing with the two departments.

**Question #20**

**Please provide at least one suggestion or recommendation for improvement related to your job as related to development processing activities.**

1. One ID# for each project. ID if this is preliminary or final applications. One central controller overall departments. City staff should be able to go online and see where each project is in the approval process.

**Planning City**

	Emp #1	Emp #2	Emp #3	Ave
#1	2	4	4	3.33
#2	2	4	4	3.33
#3	2	4	4	3.33
#4	2	4	4	3.33
#5	2	4	3	3.00
#6	4	4	5	4.33
#7	4	3	2	3.00
#8	2	3	3	2.67
#9	2	3	4	3.00
#10	3	3	2	2.67
#11	2	4	3	3.00
#12	3	3	2	2.67
#13	2	4	4	3.33
#14	3	4	3	3.33
#15	3	5	4	4.00
#16	5	5	5	5.00
#17	2	4	3	3.00
#18	4	4	4	4.00
<b>Ave</b>	<b>2.72</b>	<b>3.83</b>	<b>3.50</b>	<b>3.35</b>

**Planning Department**

	Emp #1	Emp #2	Emp #3	Ave
#1	2	4	5	3.67
#2	2	4	5	3.67
#3	2	4	5	3.67
#4	1	3	4	2.67
#5	2	4	4	3.33
#6	3	5	5	4.33
#7	4	3	2	3.00
#8	2	3	4	3.00
#9	2	3	4	3.00
#10	3	3	2	2.67
#11	2	4	4	3.33
#12	3	3	2	2.67
#13	2	4	4	3.33
#14	3	4	5	4.00
#15	3	5	4	4.00
#16	5	5	5	5.00
#17	2	4	4	3.33
#18	4	4	5	4.33
<b>Ave</b>	<b>2.61</b>	<b>3.83</b>	<b>4.06</b>	<b>3.50</b>

**Question #19**

**Please list any “pet peeves” or concerns about your job, division, department as related to development processing activities.**

1. Consistency, direction of ideas.
2. Inconsistencies in project identification, i.e., individual department numbering or identification of projects that are related.
3. Responsibility for sign approvals should be tied to site plan approval. Presently, signage is not required on a site plane and not reviewed by Planning. There is a disconnect, same for BZA. Significant time and money spent on preparing paper copies of agenda packets. Plus, in age of global warming, too much paperwork. Need to consider going paperless, including e-agendas. Wayfinding in city hall is terrible. There is a continuous line of people at the counter who have to ask directions. It needs to be easier to find where you want to go.

**Question #20**

**Please provide at least one suggestion or recommendation for improvement related to your job as related to development processing activities.**

1. Consistency, support for your decisions, ability to discuss, staff meetings regarding Plan Commission meetings, city council and department goals.
2. Create project timelines – process by which you can check status of project.
3. Need to establish efficient, effective tracking system for all projects, so a project can be tracked from the time an application is submitted, until construction, through enforcement.

# Appendix C

## Employee Long Questionnaire

City of Troy

Development Approval/Permit Process

EMPLOYEE QUESTIONNAIRE

Employee Name \_\_\_\_\_ Job Title \_\_\_\_\_

Department \_\_\_\_\_

The following questionnaire is an important and essential part of the study being conducted by Zucker Systems for the City of Troy. The study is aimed at improving effectiveness and efficiency for the City's Development Approval/Permit Process. Your ideas and thoughts are essential to the process. This questionnaire will supplement other work being undertaken by the consultants.

Please complete this questionnaire and return it in a sealed envelope to Zucker Systems, 1545 Hotel Circle South, Suite 300, San Diego, CA 92108-3415 no later than a week from today. Take your time in answering the questions and be as complete as possible. You are encouraged to include attachments or examples. If you wish you may email your response to [paul@zuckersystems.com](mailto:paul@zuckersystems.com). You can also complete the questionnaire on-line at [www.zuckersystems.com](http://www.zuckersystems.com).

Your comments may be merged with others and included in our report; however, the consultants will not identify individuals in relation to specific comments. Your responses and comments will be held in confidence.

Thank you for your help.

Paul C. Zucker, President, Zucker Systems

- 
1. What do you see as the major **strengths** of the City's development approval/permit process, the things you do well?
  
  2. What do you see as the major **weaknesses** of the City's development approval/permit process and what can be done to eliminate these weaknesses?

3. What important policies, services or programs are no longer pursued or have never been pursued that you feel should be added?
4. Do you feel any of the City's ordinances, policies, plans, or procedures should be changed? If so, list them and explain why.
5. Are there any programs, activities or jobs you would eliminate or reduce and why?
6. How would you describe the goals or mission of your function?
7. What would help you perform your specific duties more effectively and efficiently?
8. What problems, if any, do you experience with your records or files and what should be done to eliminate these problems? (Please be specific.)
9. Are there any problems in providing good service to applicants? If so, please list them and give recommendations to solve these problems.
10. Do you feel that the processing of applications and permits should be shortened, sped up or simplified? If so, what do you suggest?

11. What suggestions do you have for improving communication in the Departments of the City?
  
12. Do you have any difficulty in carrying out your functions due to problems with other departments? If so, please explain and provide suggestions on how to correct these problems.
  
13. Have you received sufficient training for your responsibilities? If not, please comment and indicate areas you would like more training.
  
14. What functions are you currently handling manually that you believe could or should be automated? (Please be specific.)
  
15. What functions that are currently computer-automated need improvement? List your suggested improvements.
  
16. What problems, if any, do you have with the telephone system and what would you suggest to correct the problems?
  
17. What problems, if any, do you have with the email system and what do you suggest to correct these problems?
  
18. Do you have all the equipment you need to properly do your job? If not, please list what you need.



19. Please provide comments concerning good or bad aspects of the City's organizational structure for development approval/permit process. Provide any suggestions for improvement or changes.

20. Do you use consultants or should consultants be used for any of the development approval/permit process or any of the related functions?

21. If you use consultants for any of the development approval/permit process what problems, if any, do you experience with these consultants and what would you recommend to correct this problem?

22. What changes, if any, would you recommend in relation to the City's various Commissions or Boards?

23. If you are short of time to do your work, what changes would you recommend to correct this problem?

24. Please list the major tasks or work activity you undertake and provide a rough estimated percentage of your time for each task. The percentages should total 100%. If appropriate, relate your time to specific types of development approval/permit process activities.

<u>Task</u>	<u>Percent</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
	100%

25. What additional handouts to the public or changes to existing handouts to the public would be helpful?

26. What changes, if any, would you recommend for the City's web page or e-government applications?

27. What changes, if any, would you recommend in relation to the City's GIS program?

28. What changes, if any, would you recommend in relation to the City's computer permitting systems or accounting systems?

29. What changes, if any, would you recommend in relation to the inspection programs?

30. When a client has a complaint are you aware of the process for handling the complaint?

Yes

No

31. List any other topics you would like the consultants to consider, or other suggestions you have for your Department or the City. Take your time and be as expansive as possible.

Note: We will interview many, but possibly not all, staff. If you would like a confidential interview we will try to do so. Let us know by phone, email or in person. Also, feel free to call us at 1.800.870.6306 or email to paul@zuckersystems.com to discuss any concerns or provide recommendations. When calling, ask for Paul.

# Appendix D

## Customer Survey Comments

**City of Troy**  
**Development Approval/Permit Process**  
**Customer Comments From Contractor Applicants**

**If you experienced coordination problems between any two departments, please list them below.**

- 7. Engineering and Building
- 5. Building and Fire
- 3. Planning and Building
- 3. Planning and Engineering
- 2. Engineering and Parks and Recreation
- 2. Parks & Rec and Planning
- 1. P.C and Council
- 1. P.C. and ZBA
- 1. Building and Recreation

**Please add any comments or suggestions you may have that will improve our process or customer service. Please give us at least one idea.**

**All Functions**

- 1. There is a problem to promptly call responsible party as not to delay permits.
- 2. Troy has made a lot of improvement over the last several years in helping to expedite projects. We could still improve more. The market is very competitive and will remain so. The faster we can accommodate tenants the better to keep Troy occupied.
- 3. There appears to be a communication problem at times between the various departments. At times everyone needs to get on the same page and listen to the concerns of the applicant and the various departments. In some communities the applicant gets a pre-application conference where a representative from each department and the applicant meet to talk though the issues prior to submittal. Another way that is sometimes successful is having an ombudsman to help walk a project through the various city departments. Communication and working together as a team is key. Especially in this uncertain economic climate.
- 4. There was no hierarchy that reviewed comments from varying departments to eliminate redundant and/or conflicting comments. As an example, our project

received reviews from Engineering, Building, and Traffic, each with a different opinion on a single design element. Not until I sat representatives from each department down in a single room, was this able to be worked out. This was the more severe case, but lesser examples of this type of miscommunication were experienced between departments on this project. I believe that someone collecting reviews, reading over them and then sending them out in one letter would help prevent redundant and conflicting review comments.

5. In the site plan review or the site condo review process, I would like to have at least one minute with all department reviews to discuss questions and comments or a list of reviewers and phone numbers given to me when the planning department returns drawings and comments.
6. Keep direct review process with inside department and not with outside consultants.
7. Treat the applicant as a customer and not as an enemy. Be reasonable in your requests. Be cost conscious, even big companies have no money tree. Comment from the city “be happy not to deal with novi.”
8. Preliminary engineering meetings with engineering department, planning department, and building department, design eng., owner/developer. Meetings can be informal after site plan is approved, this can be optional.

### **Bonds**

1. Refunding of bonds could be more timely. More office time for inspectors as they are sometimes hard to reach during the morning or afternoon.
2. How do you get your bid bonds back. We have waited over a year and still have not got our money back.
3. Could you please return our construction bonds. As of this time bond refunds are not simply late. They are not forthcoming at all. The bonds are simply being kept by the city.
4. Returning of bond fees after final inspection very very slow pulling teeth 6-8 months wrong.
5. Refund of bonds is very backed up with Building Department. Need to improve the return of Contractor’s money. We can not get an answer to when one will be refunded. We passed our final inspection almost a year ago.

### **Building Inspection Department – Plan Check**

1. Turnover of reviewed and approved drawing is not always done in a timely fashion. Some permits are one week and some up to eight weeks with all information that is required attached.

2. Walking around the checklist is very time consuming and most departments haven't reviewed the plans thoroughly; it seems they try to find problems and aren't satisfied. Inspectors are very harsh and make us undo unreasonable things. Working with the Planning Department is very helpful when starting a project and Troy's website is very useful with forms and applications. Pulling building permits is longer to do in Troy than most cities (except Orion).
3. Less paper work for small hvac changes like friction loss data sheet to extend 2 ducts on a 8x10 add. The data sheet cost more than the hvac changed to move the ducts not in my budget.
4. Eliminate the "walk through" process to secure final site plan approval. It is confusing and very time consuming. Plan review for the Building permit is very slow and it takes months. Either add another plan review or contract out the work.
5. The paper checklist needs to be placed with an online electronic checklist.
6. When permit is turned in, if the first review uncovers missing information, please contact us to get the full information to them.
7. Rather than call the organization when a permit is ready or additional information is needed would it be possible to use email? The transfer of information may be proved.
8. Building department. Communication up front on issues is needed Return phone calls. Permit process should be 2 to 3 weeks not 4 to 6 weeks. Should allow framing but no wall closure while permit is in process.
9. Six months for a permit is way beyond reasonable.
10. Simple plan review should be accomplished in 1 week or less. Tenant remodel should be able to be approved some day. Some simple (1 page) plans have taken a month or more to complete. This is unacceptable!
11. Try to improve on turn around time on signs (if possible).
12. Faster feedback on applications if something is wrong. It would be helpful for business.
13. You should not need a soil erosion permit for an addition to an existing house no other city makes you get one.
14. Better plan review process; 1. Faster turn around 2. Better review so more problems aren't found later.
15. They are absolutely terrible!
16. Demands on small renovations are fair and equitable. We've been through process twice now. It was easier to do a complete build-out from the dirt up than it was to buy a building and remodel. Building department cost us thousands of \$ that were unnecessary and put us months behind schedule. Idea: consider the economy and

little people- it can't always be about how much money can the city collect for extras.

17. Time frame for pulling a building permit is longer than any city I deal with except Novi.
18. The review should have maximum time. I had a small project sit for four months to review the code specify reasonable time. Staff should call back when you leave a message on the phone.

### **Building Inspection**

1. Quickest approval for permits I have ever had for any city. Building inspectors were not easy to work with as far as inspection times and would not give approximate time of inspection like many cities do. Permits and project were done over a year ago and don't really remember details of permit process. There was something about a soil permit that was a problem but don't remember the details.
2. More practicality and common sense on inspections. The world is not black and white. I feel a little common sense goes a long way. More acceptable inspections. Must return all calls received before phones are shut off. More common sense and courteous.
3. Fire and Building inspection need to be similar and timely. All building inspectors need to be on same page with plan review.
4. Correct attitude in Building department that all developers and contractors are out to hide things and violate codes unless they're shown who the boss is. Have field inspectors actually inspect important health/safety/items and forget about cosmetic issues. Inspectors arriving on site should start inspections with a positive attitude instead of "we're going to stop your job."
5. Inspector did not show on day of inspection for rerod. Office got him out next day as we were already shooting the gunite shell. He came out with big time attitude when it was his fault he didn't show up the previous day.
6. The building officials were very difficult to get a hold of by phone, the secretaries were not all helpful with this. Building inspectors don't carry city issued cell phones? Why, they are out in the field all day without any way to communicate with their scheduled appointments? What about safety for your inspectors wouldn't that be a good thing for them to have.
7. Quicker plan review turnaround. Return phone calls
8. Complete review as not to miss any items that may come up on second review

### **Enforcement**

1. I recommend that the city department work with neighboring cities to develop policies and procedures that are the same. Stop being an island. Permit application forms vary greatly from city to city, but they shouldn't. The subjects that require

permits vary greatly from city to city, but they shouldn't. Prices for permits vary greatly from city to city, but they shouldn't. The city of Troy should enforce its permit polices more diligently with high fines and penalties when contractors are caught without permits. Too many fly by night contractors (with no license) are allowed to work without permits. The lack of enforcement is contributing to the bad reputation that the home improvement industry suffers from. What good are rules if no-one follows them, and on-one enforces them?

### **Engineering Department**

1. For decks, no other city we have encountered requires soil erosion study/permit for a few post holes. They seem to have a qty of dirt disturbed in mind before soil erosion is a factor. A few post holes typically disturb a small amount of soil and are usually covered with visqdeen and stone within a few days of digging. The soil erosion permit for post holes seems to be unnecessary work for the engineering department and unnecessary cost for the contractor/homeowner.
2. The review time for drawing approval should not take 90-120 days for approval.
3. Engineering turnaround was very long compared to others. Regulations are not followed by the City, if own and operated by city, but are enforced to private develop.
4. The time frame for approving building permits is extraordinarily long. By the time you get feedback, weeks and weeks have passed and trying to get feedback is an egregious process. If you have to make any changes it is like starting the whole process over again. Clients can not wait that long for an approval.
5. I would suggest that the engineering department more closely models itself off of Canton Township. While dealing with large and or multi phase departments, use Canton's formant for inspections and approvals. The engineering department inspects and approves sanitary, sewer, water, storm sewer, retention areas and paving. As the infrastructure is installed. A re inspection is done as buildings are completed and sod and landscape is finished. As a condition to obtain a certificate of occupancy for the building. The last unit in a multiple unit building would not be issued a certificate of occupancy unless all engineering inspectors are done for the building and all items are complete for the building – or a letter of credit passes for incomplete items (if ? prohibits completion). The final inspections would encompass the sanitary, storm, water, grades, and roads to the limit of the building envelope as depicted on the prior plan submitted with the building application. There is no other inspection when the entire development is complete, as approvals were obtained continuously through the build of the site.

### **Fire Prevention**

1. I visited each department prior to purchasing my building to ask if there were any issues I should be aware of. All said no. Then, after I purchased the building, the fire department came in and said I had to “sprinkler” the building. This has now



cost me an additional \$150,000.00. If I had known this prior to my purchase, I would have not purchased the property.

2. Fire department code enforcement is out of hand and too expensive to comply with. Steel buildings with sprinklers built after 1980 are a very low risk building. But it seems that's where the 'muscle' is applied.

### **Planning Commission**

1. Planning commission needs to be "better informed" or "educated" before making decisions on projects.

### **Planning Department**

1. We received preliminary site plan approval after 2 ½ years and 8 meetings – (public)-. ½ acre site – no variances to ordinance and to code. The legal department and planning director changed our P.C. approved plan extorted owner into "director's plan". Made owner understand that if he didn't do this change he would "never" be allowed on a council agenda which is required for final approval and permits. Demand that public officials stick by the laws and rules adopted including city attorneys
2. The person we spoke with in the Planning Department even gave suggestions on how to submit and what the board was specifically for – this was very useful in preparing our letter and documentation. Thank you
3. Use the same criteria standards when approving similar residential sites. Make sure the planning commission members are qualified to revise such plans. Make sure they understand what's at stake before they motion for a vote.
4. I was involved in the first project after the implementation of the new pud process, so expectedly, there have been hiccups. One suggestion would have been an update from planning – we thought that we were ready to go to council, only to find out they had been waiting for one item.

### **Positive Comments**

1. The processes at Troy Building Department are much better and more efficient than other facilities. The city does a great job working with us to satisfy our customers' needs and schedules. Great job.
2. Mitch has been a great help with all my plans and has helped me with other related code questions over the years. Thanks for the great service.
3. I am pleased with service at the city of Troy.
4. I wish all cities ran as smooth as Troy.
5. I really believe the City is doing a great job. Maybe they could get a pad for the wooden bench in the waiting area.

6. I have always found the building department at Troy to be fair and helpful in the process of obtaining sign permits for my company.
7. We would prefer dealing with City of Troy then most other municipalities.
8. I guess I would if I could. I have nothing to add. I can't say enough good things about the department.

**City of Troy**  
**Development Approval/Permit Process**  
**Customer Comments By Homeowner Applicants**

**Please add any comments or suggestions you may have that will improve our process or customer service. Please give us at least one idea.**

1. Overall good job.
2. I will never seek another permit in Troy. I will do the work without a permit!
3. I had an interesting and perplexing problem about the survey of my property. The surveyor's measuring device whatever it was didn't measure my property correctly. Somewhere I have a quit claims deed maybe its five feet under than it is registered in the register of deeds. I didn't need the 5 feet to get my permit but its still mine and has been for 57 years.
4. The only person who was difficult to deal with was \_\_\_\_\_. He was rude in rejecting a request.
5. Sometimes it seems the inspectors have different guidelines than the city gives you at the start of the project. Every thing that was done according to the plans and instructions given in your handouts had to be done again (with more costs to homeowners) because they did not meet the "inspectors" guidelines. I had to pay electrical contractors twice because everything they did according to your city guideline was done incorrectly according to your inspectors. Would save a lot of time and money if the same guidelines were set for both. Makes me never want to do and improvements to my house in Troy, way to difficult and expensive.
6. Very disappointed in the inspection/approval process. Reduced inspections with little useful feedback and limited access to the inspectors caused delay and stress.
7. The whole process for all the permits I pulled generally fell apart at the inspector level. In one instance construction was stopped at 2 separate times because the inspector did not believe the approved plan. Prior to an electrical inspection I was greeted with "so you think you are an electrician." My one idea is teach the inspectors manners! I have a job that is difficult at times and if I spoke to my customers like I was spoken to they would no longer be customers. I do not have that choice with the city!
8. Mitch G. and Mark S. were excellent to work with. Mitch took the time with me while I was trying to build a garage for the first time. They were fair, responsive and thorough. I really can't thank Mitch enough for all the help. Great guy.

9. Resolve any open building permits before the sale of any property to a new owner.
10. My process went pretty smoothly!
11. Dealing with the city building department was enjoyable. They are very helpful and forward on getting the job completed and were open to provide guidance to our questions. The project was completed successfully on time.
12. Some written specific instructions to be available to guide the process for doing any renovations.

# Appendix E

## Building Inspection Department Data

**Table 32  
Plan Review Data**

<b>Type</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Add Alt	3	1	1		
Addition	19	9	7	8	5
Alter	276	315	346	332	185
Antenna	7	1	1	2	6
Awning	2	11	2	11	5
Batch Oven	1				
Bathrooms	1				
Build Out					1
Bulletin #2		1			
BZA-M.S.	1				
Canopy		1	1	2	
Cell Antenna			10		
Cell Tower	5	3		2	
Closet	1				
Clubhouse		1			
Completion	5	6	4	3	1
Concrete Pad					2
Construct	2	2	6	9	6
Cooler	1				
Corridor	1				
Crane	2				
Deck					1

Demo	5	5	8	3	8
Denial	1				
Doors	1			2	
Dumpster Encl	1	2	2		
Exit Road		1			
Expand	2				
Façade				1	
Fence			2	2	1
Fiber Tower				1	
Fire Doors	1				
Fire Repairs					1
For Denial			1		
Found & Shell		1	1		
Foundation	2			1	
Fuel Tank		1			
Furniture Plan		1			
Garage		1			
Generator	3	4	2	2	1
Hiring Trailer			1		
Int. Renov	1				
Interior buildout			1		
Kiosk			2	1	1
Kitchen Add		1			
Mag Locks				1	

Mausoleum	1				
Monopole	1		1	1	
New Bldg	17	6	1		8
New Canopy		1			
New Construct	2	7	10	20	12
New Offices				1	
New/Fdn/S	1				
Outside Storage				1	
Pad			1		
Paint Booth	1				
Parillion	1				
Parking			1		
Parking lot	5	2	4	8	1
Parking Var	1				
Patio		1	1		
Placement	1				
Platform		1			
Poured Wall				1	
Pre-Fab Shelter		1			
Press Pit		1			
Proposed New					1
Ramp					1
Renovation	2	2			
Repair	1	2		6	1



Retail Center				1	
Roof				1	
Sales Trailer			1		
Screen wall	1				
Shed	1	2			
Shell				1	1
Shelter		1			
Sidewalk				1	
Site Improv	2	4		3	2
Smoke Shelter				1	
Smoking Shed					1
Spray Booth	1	3		1	
SSDE'S				1	
Steel Mezz		1			
Steel Support					1
Storage	1	1	1	1	
Tanks				1	
Temp Trailer	1				1
Temp Walkway					1
Tenant Alt.	3	7			
Tenant Comp	15		10	7	7
Tent	1		1		
Testing	1				
Tower	1				1

Truss Work	1				
Wall				1	
White Box	1		5		
Windows				1	
Wrecking		1			1
Grand Total	408	412	435	442	264